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DECENNIAL SUPPLEMENT

ENGLAND AND WALES

1921

PART II. OCCUPATIONAL MORTALITY,
FERTILITY, AND INFANT MORTALITY.

LONDON:

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OCCUPATIONAL MORTALITY, FERTILITY, AND INFANT MORTALITY. REPORT.

INTRODUCTION.

The present report on Occupational Mortality differs from its predecessors in certain respects, each of which requires justification, as the advantages of continuity in such a series as these reports form should not be lightly sacrificed.

In the first place, it deals with the natality and infant mortality of occupations as well as with the mortality of their members themselves, that is to say, with the frequency of births to each occupation and with the frequency of death amongst the infants born. This portion of the report, which is in continuation of those published for 1911 on the same subjects in the Annual Reports of the Registrar-General for 1911 and 1912, will be found in pages xcv-cii, and refers to the census year 1921 only, whereas the remainder of the report resembles its predecessors in dealing with the deaths of members of the occupations compared during three years. But these years are 1921-23, and not, as would accord with precedent, 1920-22. By this change the advantage has been sacrificed of making the census population represent as nearly as possible the mean for the three years dealt with. But the circumstances of the time were very abnormal. At the beginning of 1920 demobilisation had not long been completed, and there was consequently reason to suppose that large numbers of men recently discharged from military service had not yet found their way into permanent employment. It seemed probable, therefore, that the deaths registered in 1920 could not be accepted as corresponding with a normal occupational distribution of the population, and it was accordingly decided to substitute the deaths for 1923, even at the cost of assuming the population for the first, rather than the second, of the three years dealt with as constant throughout the whole period. This course, moreover, had the further advantage of dealing with a period during which the classifications used, both for occupations and for causes of death, had remained constant throughout. Otherwise the modifications in the International List of Causes of Death, first taking effect in 1921, would have caused a certain amount of embarrassment and added labour in tabulation, and the much more radical changes in the classification of occupations, dating from the same period, would have entailed a correspondingly greater difficulty.

It is the latter changes which have involved the most serious loss of comparability between the present report and its predecessors, dating back to 1851 (Fourteenth Annual Report, pp. xv-xxiii). But as the nature and effects upon comparability of these changes, as well as the reasons for making them, have already been discussed in the General Report on the Census of 1921 (pp. 86-89), they need not be restated here. The present report differs from its predecessors mainly because for the first time it distinguishes occupations on purely occupational lines. The effect of this is to accentuate contrast between the mortalities of the occupations compared, the real differences having previously been understated. For the records for an unhealthy occupation are no longer, as before, diluted by inclusion of those for other workers, industrially or otherwise related, but not subject to the same occupational risk. An instance of the effect of this change, quoted in the General Report, is the case of the cutlery grinders. These workers, who are subject to special silica risk, were formerly grouped with all others concerned in the manufacture of cutlery, many of whom are subject to no special risk, under the heading "cutler, scissors maker," with the result that the mortality of the composite group in 1910-12 exceeded the average by 63 per cent. For 1921-23, however, we have figures relating to the actual grinders of cutlery (*i.e.*, men classed occupationally as metal grinders and industrially as employed in the cutlery trade), and it is found that the corresponding excess of their mortality is no less than 230 per cent.* This may be regarded as a new revelation of occupational risk, for the results of the old classification gave no indication of such an extreme degree of mortality excess. But even apart from such sensational results, of which the case of the cutlery grinders forms the best example, the new classification throws much additional light on occupational mortality by showing on which workers the risk falls in industries already known to involve special danger to life. The pottery trade furnishes an example of this.

In the old classification all pottery workers were grouped under the title "potters; earthenware, etc., manufacture," and in the report dealing with occupational mortality

* Unfortunately, the mortality ratios quoted in the General Report are incorrect. At all ages for which the calculation can be made (16 and upwards) the excess of deaths recorded for cutlery grinders over those at the rates for all occupied and retired civilians is 172 per cent.; at 20-65, 230 per cent., and at 25-65, the ages dealt with in 1910-12, 240 per cent.

for the years 1910-12 these workers were shown to be subject to a mortality 51 per cent. above the average. It is now possible to ascertain which processes contribute most to this excess, and reference to Table B shows that the mortality of potters, millworkers, and slip makers is 64 per cent., that of dippers and glazers 41, and that of the oven men and placers 83 per cent. above average.

As comparison of the records for 1921-23 with those of previous reports had been rendered impossible by these radical changes in occupational classification, it has not been necessary in deciding on methods of tabulation to adhere to those previously followed for the sake of comparability. Advantage has been taken of this freedom to introduce some minor modifications of method, but no radical change has been made. Allowance for the effect, often great, of differences in the age constitution of the occupations compared is still made, as before, by means of a "Comparative Mortality Figure" (C.M.F.). This is really a standardized death-rate, similar to those used in the text of the Statistical Review, but based on a population* so chosen as to yield exactly 1,000 deaths at the death-rates for different ages prevailing amongst all occupied and retired civilian males in 1921-23 (see page 2, Abstracts). This population differs in two respects from that upon which the comparative mortality figures of the two preceding returns (for 1900-02 and 1910-12) were based. This was a sample of the general male population (including the never occupied as well as the occupied and retired) in 1901 so chosen as to yield 1,000 deaths at the age mortality rates prevailing in 1900-02. The same basis was retained for 1910-12 for the sake of comparability with the past, in accordance with the practice followed in the Statistical Review. But, as already explained, this consideration does not apply to 1921-23, and advantage has been taken of this fact to change the basis to that of the 1921 census, which, of course, assigns weights to the age-group mortalities of 1921-23 occupations more appropriate to our present age distribution than those of twenty years earlier.

Besides the change in date there is a change also in the nature of the population used as the standard. Formerly the total male population aged 25-65 was employed, but now that of occupied and retired civilian males aged 20-65. The reasons for this change, together with those determining the policy, consistently followed in all the reports of this series, of excluding deaths after the age of 65 from the measure of general mortality applied to the various occupations, are discussed in Appendix A (page 117).

The use of a new standard population, yielding 1,000 deaths at average current mortality rates, for calculating the C.M.F.s (see Appendix A, page 119) in this report involves reversal of the policy followed in that for 1910-12, when the same standard was used as for 1900-02, yielding 1,000 deaths at that date, but only 790 in 1910-12. This was done in order that the C.M.F.s for 1910-12 might be comparable with those already published for 1900-02, and so measure changes of mortality for each occupation between the two periods. But as this is not possible in 1921-23, owing to the radical change in occupational classification described above, which effectively prevents almost all such comparisons, it was decided to obtain the advantages of a standard population typifying the age distribution of the period and furnishing C.M.F.s in percentage form.

Apart altogether from the question, discussed in Appendix A, of the most suitable method of summarizing its results, the collation of registered deaths with census population in order to obtain occupational mortality rates has always been recognized as involving a possible fallacy which must be referred to in this as in previous reports of the same series. It cannot be assumed that the deaths tabulated for any occupation have occurred exclusively amongst the men tabulated to that occupation. So far as this is the result of ordinary changes of occupation by men in normal health, as from agricultural labourer to policeman or farm bailiff, the returns are probably not prejudiced, especially when the population is that of the mid-year of the mortality experience dealt with, for as such changes of occupation are always going on the census figure may be regarded, at all events in normal times, as representing an unprejudiced and typical sample of the occupational population during the period supplying the deaths, and with which they may therefore be fairly compared, even if they are not of individuals actually included in the census occupational population in question. The only exception required to this statement applies to cases of rapid increase or decrease of the numbers employed in any given manner. Even these changes can have little effect in the ordinary case, where the population is that of almost the middle of the period dealt with. And although, for the reasons stated on page v, the risk had to be taken on the present occasion of foregoing this advantage, it may fairly be claimed that this risk has been minimized by elimination of industry from the occupational tabulation employed. For the economic influences in question affect industry far more readily than occupation.

* See Appendix A.

The fluctuating fortunes of industry may determine the employment of carpenters, reducing it in some directions and increasing it in others, during any given period, but a carpenter tends to remain a carpenter, changing his industry much more readily than his occupation.

But a more important source of discrepancy between the census and registration figures collated in the tables is probably to be found, not in economic, but in health considerations. The reader must be reminded, as in previous reports of this series, that the weakly puddler or blacksmith may be forced to adopt a less strenuous occupation before his death. If so the occupation at death (the last occupation before work ceased) may differ from that at census if change of occupation has occurred shortly after the census, and death shortly after the change, liability to this being increased for 1921-23 by the unsymmetrical position of the census date. But even when the death corresponds with the occupational return at census the same fallacy may apply in only slightly less degree. For the former puddler may be obliged by bronchitis, skin cancer, or other chronic disease incidental to his calling (Tables D and F) to become a costermonger for years before his death, in which case the death corresponds with the census return, although really pertaining by origin to another occupation. The only difference in this case is the transfer of one life from puddlers to costermongers in correspondence with the death, but at most ages this goes a very short way towards compensating for the death transfer. This type of error must evidently tend towards understatement in some degree of the mortality of strenuous occupations, and corresponding overstatement of those open to men of impaired physique, but no measure of the extent of this tendency can be applied.

Two further instances of presumable want of correspondence between census and registration data, unconnected with the influence of ill-health on occupation, and each, like it, of general application, are discussed in connexion with the low mortality returned for the "never occupied" in old age (Appendix A, page 118) and with the low rates recorded for foremen in various callings and other occupational groupings implying leadership status (page lv). Besides these general instances there are doubtless many others applying particularly to certain occupations, but under our present system of national records no means of avoiding this difficulty has ever suggested itself. It would disappear if the records of life and death could be kept together for individuals, as in family genealogies, stud books, etc., but so long as they consist of mere records of innominate numbers, in which no one single event can be related to any other, the elimination of discrepancies of this type will probably remain impossible.

No attempt is made in this report to deal with the occupational mortality of females. This omission is due to reasons which have been discussed in previous reports of this series, notably that for 1900-02, pp. cxxii-v. Briefly, occupation of deceased females is very imperfectly stated in the death registers, the proportion for whom any mention of occupation is made being far below that for the living as enumerated at the census. In view of the intermittent and transitory character of much female occupation it may be doubted whether this difficulty can ever be overcome, but it does not follow that information as to the effect of occupation upon female mortality is unobtainable.

It will be found from the following pages that the effect of occupation upon male mortality is probably on the whole more indirect than direct—that mortality is influenced more by the conditions of life implied by various occupations than by the direct occupational risks entailed. The figures for males do not permit of differentiation between the two types of influence, as both are at work in every case, so no definite proof can be adduced of this suggestion, which merely represents an impression created by study of the facts dealt with. But from the deaths of females another set of data might be obtained which would serve to distinguish the two types of occupational influence, being entirely dependent upon the indirect. In 1921 the occupations of 6,878,325 married males between 20 and 65 years of age were tabulated, of whom 6,423,267, or 93 per cent. (Census, 1921, Dependency, Orphanhood and Fertility, Table 6), were enumerated on the same schedules as their wives. It would therefore be possible to tabulate the mortality of 6-7 million married women according to the occupations of their husbands. If this were done, we should, for the first time, obtain a measure of the indirect effect (which, in the case of females at all events, is almost certainly of chief importance) of occupation upon mortality. This would not only be of importance for females, but would provide a means of roughly differentiating between the two types of occupational influence upon males. For no trade could longer be regarded as directly prejudicial to health if it were found to entail as much excess risk for the wife as for the husband. In such a case excess mortality would evidently be in the main attributable to the social conditions implied. These, indeed, might well affect the wife more than the husband, but at least we should for the first time have a rough measure of the two types of influence, of which it seems likely that the direct has attracted in the past more than its due share of attention.

SOCIAL AND OCCUPATIONAL DISTRIBUTION OF MORTALITY FROM VARIOUS CAUSES.

The first of these reports to deal with the distribution of various causes of death by social class was that for 1910-12, but it only presented the facts, without discussing or comparing them. A paper published in *Biometrika* for December 1923 attempted this task, and may be used for comparing the results obtained by the social class distinctions of the 1911 and of the 1921 censuses. The basis in each case is purely occupational in intention. In the present report every occupation distinguished in the census has been assigned to one of five social classes, these assignments being shown in Table A. For 1910-12 the same five classes were used, but in addition three groups, two, miners and textile workers, largely of industrial type, the third being agricultural labourers, which are now merged with the five great classes, were separately dealt with. The 1911 classification did not distinguish the occupations carried on in mines and textile factories sufficiently to permit their assignment to social groups, but the definitely occupational basis of classification in 1921 (*see* General Report, Census, 1921, pages 86-88) has provided the means for their analysis by social class, as indicated in Table A; and agricultural labourers have been assigned to Class IV (that consisting partly of skilled and partly of unskilled workers) so as to make the grouping into five great classes complete for the whole occupied and retired population.

The improvement effected by genuinely occupational tabulation is not limited to the fusion of these three groups with the general population. It has also provided much better means of assigning individuals to their appropriate class. In 1911 many "occupational" headings of an industrial type included members of all social classes, from employers to general labourers, and assignment could only be made to the social class thought most appropriate for the average member of a very diverse group. Occupational tabulation in 1921 has got over this difficulty, and it is no longer necessary to assign the head of a tinplate, etc., works to the same social class as his labourers. The assignments in Table A, made in consultation with the Ministry of Labour, are of course open to criticism, but they do imply at least that the social class of individuals has been assessed in accordance with the nature of their individual employment, which was far from being the case in 1911. The effect should be to increase contrast, decreased before by wrong assignment of individuals, but observation of this result is obscured by the merging with the remainder of the three groups previously kept apart. The correlation, at all events, of mortality with assigned social class is now closer than it was in 1910-12. Standardized mortality, all causes, for ages 25-65 in 1910-12 and 20-65 in 1921-23, has compared as follows for Classes I-V at the two periods, the class rates being stated per cent. of that for all the occupied and retired (*see* Diag. 2):—

—		I.	II.	III.	IV.	V.
1910-12	...	88	94	96	93	142
1921-23	...	81·2	94·2	95·1	100·7	125·8

On the present grading mortality increases regularly from Class I to Class V, but the differences are greatest, as might be expected, towards each end of the scale. It is here alone that luxury and misery have to be taken account of, and differences in circumstance, both within Classes I and V and between them and adjoining classes, must be far greater than at other parts of the scale.

The greater advantage shown for Class I in the present report is largely due to greater restriction of its contents, clerks, for instance, having been assigned here in 1911 but to Class II in 1921. The result has been to cut down Class I to quite small proportions, but the object in view was not equal distribution of the numbers dealt with, but distinction of conditions of life; and the numbers who can be assigned, on an occupational basis, to the "comfortable classes," remain quite small even with the new tabulation. The proportions of the numbers stated for the classes in Table A, per cent. of that for all occupied and retired males, are as follows:—

All Classes.	I.	II.	III.	IV.	V.
100	2·33	20·35	43·47	20·45	13·40

So we see that for the 84 $\frac{1}{4}$ per cent. of the population comprised in Classes II–IV, the class variation of mortality is almost negligible—merely from 94·2 to 100·7 per cent. of average. It is only at the ends of the scale that the social factor is of much account. This, of course, is in accordance with the usual features of distribution of phenomena in general, extremes such as can seriously affect mortality being rare.

The relative improvement shown under the new classification for Class I applies also to Class V, the excess of its mortality (over average) having fallen from 42 to 25·8 per cent. for 1921–23. This is largely due to avoidance of the former inflation, discussed in the report for 1910–12, of the mortality of general and undefined labourers (*see* page xcv), who now form 47 per cent. of Class V at the ages dealt with, 20–65 (Table A). Were it not for this the contrast in mortality between Classes I and V would be seen to be much greater in 1921–23 than in 1910–12, as it ought to be, in consequence of better differentiation of the classes by means of the new occupational classification. This can be appreciated by noting the increase in contrast between Classes I and IV (88–93 in 1910–12, and 81·2–100·7 in 1921–23).

The numbers living at various ages and deaths and death-rates at the same ages from various causes are stated for these five classes on pages 3–5. From the years of life (population \times 3) there stated the age distributions of the five populations may be seen to compare as follows:—

TABLE 1.

Age Distribution in Social Classes. Number living in each Class at each Age Group per thousand at all Ages.

Age.	All occupied and retired civilians.	Class I.	Class II.	Class III.	Class IV.	Class V.
16—	105	48	62	106	145	113
20—	114	87	86	121	131	109
25—	213	178	202	233	206	189
35—	206	214	223	212	185	191
45—	177	209	202	167	162	190
55—	113	154	134	100	107	130
65—	36	49	42	30	34	45
70—	36	61	49	31	30	33
All ages ...	1,000	1,000	1,000	1,000	1,000	1,000

It will be noticed that the largest proportions of young men (16–25) are found in Class IV, which, being intermediate between skilled and unskilled, doubtless includes many youths who later qualify for inclusion amongst the skilled workers (Class III). The largest proportion at each of the three highest age groups, on the other hand, (ages over 55) is returned by Class I, probably in the main because of greater longevity (Diags. 1 and 2), but possibly also to some extent for a similar reason to that for the early life excesses in Class IV—that added years give increased opportunity of advancement. During the middle period of life, 25–55, the maximum proportion moves steadily from its early life position with Class IV to its later life position with Class I, being with Class III at 25–35 and II at 35–45. The proportions for Classes I and II are below the general average under 35, and above it over that age—a feature almost exactly reversed by Class III. Class IV proportions are below average at every age above the first two, at which they are highest of all. Class V is above average chiefly in later life, 45–70, this feature presumably representing descent, as the high proportions at the same ages for Class I represent, to some extent, ascent of the social ladder. The Class V proportion at each age over 45 is much the highest for the three “working” classes (III–V). The gradual ageing of the population from Class V to Class I might be expressed by mean ages, but the absence of detail at the higher ages (over 70) would reduce the value of such averages (page xi). The general trend is sufficiently expressed by the fact that at all ages under 35 Class I proportions are lower, and at all ages over 35 higher, than those for Class V. Prosperity on the whole makes for longevity, though certain pitfalls which it provides for the imprudent will be dealt with later.

The age group death-rates of the five classes are compared, for the various causes dealt with, in Table G. As the rates themselves are to be found on pages 3–5 only their

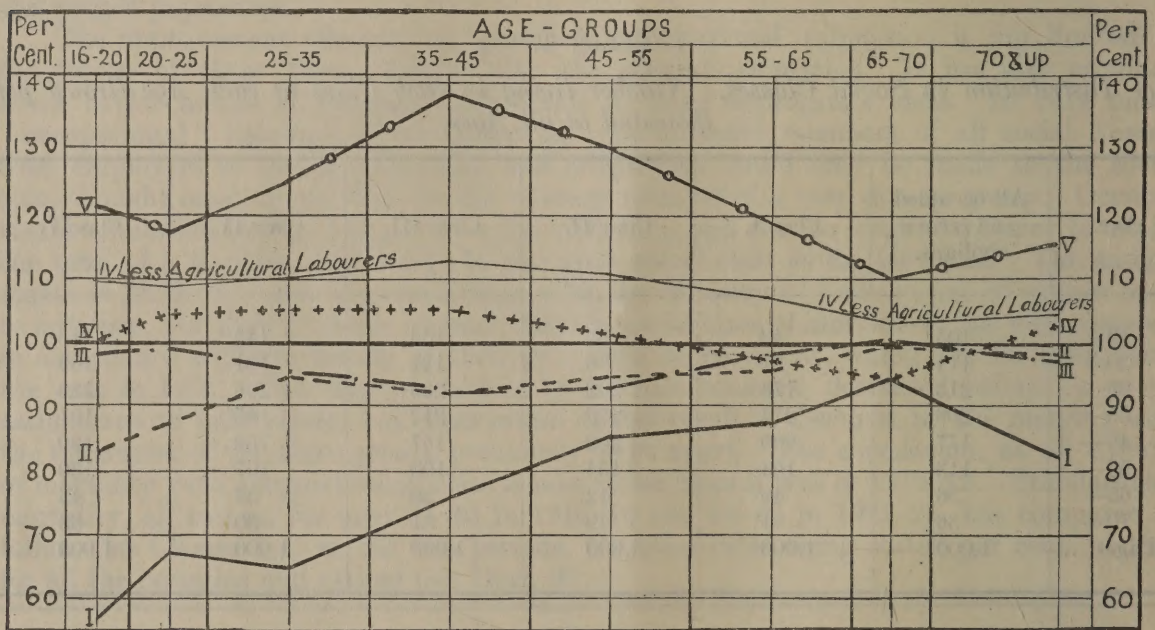
ratios to those for all classes (all occupied and retired civilian males) taken as 100 are shown in this table, but in certain cases, where for some reason it has appeared desirable to make the comparison for small mortalities, rates per million have been employed in place of the rates per 100,000 on pages 3-5, in order to allow for small differences. But as such differences must be of doubtful significance comparison of very small mortalities has as a rule been omitted altogether, that for cerebral hæmorrhage, *e.g.*, being made only for ages over 25, and that for diseases of the prostate for ages over 45.

Use has also been made of this table to display similar comparisons for the mortality of the "never occupied" (Appendix A, page 118), whose C.M.F.s will be found in Table 2. The C.M.F.s for the social classes are recorded in Table C, and the ratio for each class to the general average in Table D.

In these tables, and in the corresponding diagram (Diag. 3) the chief causes of death are distinguished and compared, but before considering them the social distribution of mortality in general at various ages may be dealt with. This is represented in Diag. 1, derived from Table B.

DIAGRAM 1. SOCIAL DISTRIBUTION OF MORTALITY (ALL CAUSES) AT VARIOUS AGES.

MORTALITY AT EACH AGE OF THE SOCIAL CLASSES COMPARED, PER CENT. OF THAT OF ALL OCCUPIED AND RETIRED MALES AT THE SAME AGE.



This diagram shows that the difference between class mortalities, and especially the advantage of Class I, is greatest in early adult life, and tends on the whole to decrease thereafter. The handicap of Class V is greatest in middle life, 35-45, when the influence of adverse occupational conditions is presumably at a maximum. These conditions appear to have some selective influence in eliminating the unfit, for if they are survived in middle life the relative chance of survival increases later on. This is very noticeable in the case of certain unhealthy occupations, such as that of barman (page 87) and costermonger (page 74). The diagram brings out very clearly the close approximation, at all stages of life, of mortality for the great bulk of the population, comprised in Classes II-IV.

The comparatively low rates for Class IV at ages over 45, especially at 65-70, when its rate is less than that for Class I (pages 3 and 4), are due to the inclusion in Class IV of agricultural labourers, whose low mortality is proportionally lowest between 35 and 65 (Table B). The rates for Class IV, apart from agricultural labourers, exceed the average at all ages, their ratios per cent. of those of all occupied and retired being:—16-110; 20-109; 25-110; 35-113; 45-111; 55-107; 65-103; and 70-104. These ratios, plotted in Diag. 1, yield a curve much closer to that of Class V both in position and shape than that for the complete Class IV. There is the same maximum at 35-45 as for Class V, and in fact the curve for Class IV without its agricultural labourers resembles a much mitigated replica of that for Class V. It is inevitable that, dealing with so highly urbanized a population as that of England and Wales, the inclusion of a large block of agriculturists in any one of five social classes should somewhat disturb the sequence of the gradation, which otherwise applies so predominantly to town dwellers, but the simplicity of a scheme complete in five groups will probably be held more than to compensate for this disturbance.

The increased divergence of the rates for Classes I and V after age 70 is passed, in contrast with their previous long continued convergence with increasing age, is somewhat surprising. Probably this is due very largely to the overstatement of the mortality of occupied men at these ages to which attention is drawn in Table *a* of Appendix A. It is likely that overstatement due to faulty filling in of the census schedule should be at its maximum for the less prosperous and less educated classes.

But while this table shows that an average overstatement for the occupied and retired of about 22 per cent. arises in this way at this time of life, another factor, of comparable if probably of smaller magnitude, and tending to further differential overstatement of the rates shown at 70— for the upper social ranks, has also to be considered. It may be presumed that, as a result of lower Class I mortality, the proportion of men entering this age group who survive to extreme old age is much higher for Class I than Class V.

The lower the mortality of the population concerned the larger will be the proportion, in so wide a group as 70 and over, of very old people, with their correspondingly high death-rates. This alone may suffice to make a population of lower mortality at each age over 70 appear as of higher mortality when all these ages are massed together. This may be seen from the following comparison for the North and South of England as defined in the Statistical Review (Part I, Medical Table 14, page 62, 1926). Mortality is higher in the North (in the proportion 1,205 : 918, or 1,000 : 762, in 1923—Statistical Review, Text, Table XXIII, page 32). But if the two populations as enumerated in 1921 had each experienced the average mortality of the whole country in that year their massed death-rates in later life would have compared as follows :—

Mortality at all ages over those specified :—

			Males.		Females.		Both Sexes.	
			North.	South.	North.	South.	North.	South.
65	...	...	1,000	1,089	1,000	1,113	1,000	1,103
70	...	...	1,000	1,063	1,000	1,082	1,000	1,074
75	...	...	1,000	1,040	1,000	1,062	1,000	1,053
80	...	...	1,000	1,026	1,000	1,040	1,000	1,034
85	...	...	1,000	1,010	1,000	1,021	1,000	1,016
90	...	...	1,000	1,001	1,000	1,007	1,000	1,003
95	...	...	1,000	1,000	1,000	1,000	1,000	1,000

As 95 and over is treated as a single age group there is naturally no opportunity here for the consideration in question to manifest itself, but at all the earlier ages the effect of greater survivorship in the South is shown by excess in the proportion of the older persons within the group, whose higher mortality would, if the death-rate at each age were equal in any year, have the effect of making the massed rate appear to be higher for the generally longer lived population. The southern excess in the proportions at the higher ages is shown in the following comparison, showing the numbers in the North and South at each age over 65 per million at all ages over 65.

			Males.		Females.		Both Sexes.	
			North.	South.	North.	South.	North.	South.
65—	...	...	493,390	439,659	445,042	390,838	466,082	410,871
70—	...	...	287,346	286,419	289,201	286,732	288,394	286,604
75—	...	...	145,872	169,927	167,264	183,780	157,954	178,095
80—	...	...	55,861	74,400	72,035	92,983	64,997	85,358
85—	...	...	14,552	23,801	21,568	35,104	18,515	30,466
90—	...	...	2,557	4,991	4,215	8,839	3,493	7,260
95—	...	...	422	803	675	1,724	565	1,346
65—	...	...	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000

As age advances and the survivors die off the proportion within each massed group of those at ages with mortality above the group average declines, and on this account the feature under consideration gradually lessens. But the importance of a factor which at 70— can load the scales against the healthier South to the extent of over 6 per cent. is not to be neglected, for a very large proportion of the differences between the occupations whose mortality at 70— is compared in Table B must be far greater than that between the whole populations of the north and south of England. Unfortunately in their case the tabulation of deaths does not admit of the matter being tested.

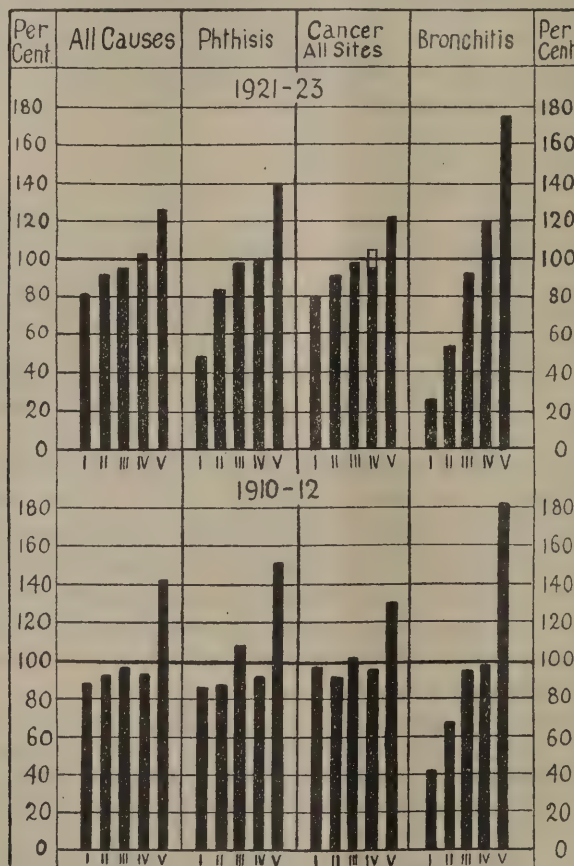
The entries under 70— in Table B are consequently very unsafe guides to the mortality experienced, as a high rate may signify either high mortality or high average age of the population in the group, or both. But as the numbers of men retired from each occupation (Occupation Tables, Census 1921, Table 5), and the deaths in the occupations, have been

tabulated for ages 70— in a single group, there is no alternative to the entries under this heading in Table B, and all that can be done is to give this warning of their frequently misleading nature.

The omission of these higher ages from those (20–65) furnishing the data on which is based the summarized statement (C.M.F.) of occupational mortality does not imply that their importance in this connexion is negligible. Although this omission, which has been a constant feature of these reports concurrently with tabulation for the higher ages, must still be regarded as desirable for reasons discussed in Appendix A, the after effects of occupation upon mortality occurring after work has ceased possess an interest of their own which makes it desirable to tabulate the records at these ages also. Various non-official investigations based on the material presented for these ages in earlier supplements give evidence of this, and recent extensions of industrial insurance have increased the demand for this information.

DIAGRAM 2. SOCIAL DISTRIBUTION OF MORTALITY
FROM VARIOUS CAUSES, 1921–23 AND 1910–12.

COMPARATIVE MORTALITY FIGURE FOR EACH SOCIAL CLASS
FROM EACH CAUSE PER CENT. OF THE CORRESPONDING C.M.F.
FOR ALL OCCUPIED AND RETIRED MALES.



NOTE: Cancer all sites—The outlined addition to the solid column for Class IV represents increase of mortality ratio for that class resulting from exclusion from it of agricultural labourers (see page xiii).

Diag. 2 compares the mortalities of the five social classes at all ages (20–65) for various causes, as Diag. 1 compares them for all causes at various ages. It also makes the corresponding comparison in each case for 1910–12 in order to compare the effects of the social gradation in use then and now. In this comparison, Classes I–V in 1910–12 are treated as equivalent to Classes I–V now, but whereas they now include the whole occupied and retired civilian population, they did not in 1910–12 include three large groups, textile workers, miners, and agricultural labourers, which were then excluded from the graduated scale (page viii). The differential social distribution of mortality, both from all causes and from each of the three great causes dealt with in the diagram, phthisis cancer and bronchitis, is much more clearly shown by the returns as socially grouped for 1921–23 than for 1910–12, a statement applying also to other causes. The percentages of the general average plotted in Diag. 2 are as follows, those for 1910–12 being derived from the Biometrika article referred to on page viii and those for 1921–23 from Table D.

In each case the figures quoted represent the percentage ratio of the standardized mortality (C.M.F.) for the social class to that for all occupied and retired males.

The increase in correlation of mortality and social status as shown for 1921-23 in comparison with the records for 1910-12 is very obvious. The rates for total mortality now show increase at every stage from the Class I minimum to the Class V maximum, whereas the earlier social classification brought out little difference between Classes I and

	Social Class.				
	I.	II.	III.	IV.	V.
All Causes—1910-12 ...	88	94	96	93	142
1921-23 ...	81·2	94·2	95·1	100·7	125·8
Phthisis—1910-12 ...	86	87	109	92	152
1921-23 ...	48·9	84·4	97·7	100·4	140·1
Cancer—1910-12 ...	99	91	101	96	131
1921-23 ...	79·8	92·0	99·0	96·4	122·9
Bronchitis—1910-12 ...	41	68	95	98	184
1921-23 ...	25·6	54·8	93·7	119·8	176·2

IV, the chief feature being great excess for Class V. Very much the same statements may be made for phthisis, and for bronchitis the regularity of gradation, considerable in 1910-12, is greatly increased in 1921-23, while its range is also increased. The cancer figures for 1910-12 show no significant variation with class as between Classes I and IV, but those for 1921-23 increase steadily from Class I to Class V, except for a fall for the Class IV rate below that of Class III, which is entirely due to inclusion of agricultural labourers with Class IV. Excluding them the Class IV cancer ratio becomes 104·2, and the increase accordingly is uninterrupted, as indicated by the open extension of the 1921-23 Class IV cancer column in Diag. 2.

Both bronchitis and cancer of the sites grouped as “exposed” in Diag. 5 display remarkably regular grading in 1921-23. There is a tendency for all the causes dealt with in Diag. 2 to approximation between Classes III and IV, but as this has been shown in the case of its maximum extent in Diag. 2, as well as in Diag. 1, to be due to a recognizable and natural cause, it may be assumed that in other cases also the same explanation applies. This cannot, however, explain the same feature (for all causes, phthisis and cancer) in 1910-12, when agricultural labourers were excluded from the five graded classes. But at this period the material for social grading provided by occupational classification was, as explained, inadequate. It is the results obtained from the improved information for 1921-23 which have to be considered, and for these a large measure of success may be claimed on the strength of the regularity of gradation displayed in Diags. 1-3 and 5. If such differences did not exist in fact, it is impossible to conceive of their accidental fabrication in any attempt at social grading, but the records for 1910-12 show how easy it is for error in such grading to obscure differences actually existing. On this line of reasoning regularity of mortality gradation for diseases sensitive to social conditions may be accepted as a test of success in social classification, and if so, the present scheme is amply vindicated by the record of many diseases in Diagram 3.

The incidence of various forms of mortality upon the social classes is compared, with due allowance for differences of age, in Tables 2 and 3. These tables deal with the five social classes and, to complete the tale, with their total, all occupied and retired males, with those for whom no occupation is returned on the census schedules, and with all males of the ages taken into account in working the Comparative Mortality Figure, 20-65. At these ages it will be seen (Appendix A, page 118) that the rates for the “never occupied” are much less seriously in error than later in life, and Tables 2 and 3 give an idea of the diseases giving rise to invalidism which prevents occupation.

But the indications of these tables on this point must be studied in the light of Table G, which introduces distinction of age—a vital matter in this connexion. From Table 2 we may suppose that the excess mortality of the never occupied is chiefly contributed to by nervous diseases (other than cerebral hæmorrhage), accident, respiratory tuberculosis, other tuberculosis, and suicide, in the order named; while, on the other hand, causes chiefly affecting later life—cancer, cerebral hæmorrhage, heart disease, respiratory disease and prostatic disease—are returned as of lower than average mortality for the never occupied. This is not due to greater survival to the ages chiefly subject to these forms of mortality by those healthy enough to enter occupations, for the effect of this is eliminated by the process of standardization, and the numbers dealt with, even for the never occupied at the higher ages, are sufficient to yield reliable rates.

TABLE 2.

Standardized Mortality (C.M.F.) of the Five Social Classes, of All Occupied and Retired Civilian Males, of the Never Occupied and of All Males, from All Causes and from certain Causes, at ages 20-65 Years—1921-23.

	Social Class.					Occupied and Retired Civilians.	Never Occu- pied.	All Males.
	I.	II.	III.	IV.	V.			
All causes	812	942	951	1,007	1,258	1,000	1,213	1,013
Influenza	30.4	34.1	34.0	40.9	43.0	36.4	45.1	36.5
Respiratory tuberculosis	80.0	138.0	159.8	164.2	229.0	163.5	211.3	168.4
Other tuberculosis	10.1	13.6	13.6	13.5	14.8	13.8	44.3	14.3
Syphilis etc.—	19.7	24.7	26.1	26.0	37.9	27.1	45.7	28.9
Syphilis	1.4	2.4	2.3	3.1	5.2	2.8	4.3	2.9
Tabes dorsalis	4.2	5.4	4.6	4.2	6.0	4.9	6.4	5.1
General paralysis of insane	9.6	11.0	12.7	11.9	18.3	13.3	25.2	14.0
Aneurysm	4.1	5.8	6.1	6.9	8.2	6.3	9.8	7.1
Cancer, all sites*	102.5	118.1	127.1	123.8	157.8	128.4	69.2	127.8
Chronic rheumatism etc.; gout	2.1	3.0	3.5	3.3	3.9	3.3	2.8	3.3
Diabetes	15.2	17.7	11.2	9.2	8.1	12.2	13.1	12.1
Alcoholism	1.2	2.9	0.5	0.8	0.8	1.0	4.5	1.0
Cerebral hæmorrhage, etc.	39.7	46.2	44.7	42.3	48.5	44.9	34.4	45.4
Other diseases of nervous system	26.0	30.4	29.7	31.2	40.3	31.2	163.2	34.1
Valvular disease of heart	36.1	57.2	61.1	67.3	80.9	63.4	47.6	63.9
Other heart disease	69.7	71.6	59.0	60.4	75.6	65.6	55.0	64.9
Arterio-sclerosis	31.9	22.3	19.1	17.4	23.5	20.5	18.1	20.5
Other diseases of circulatory system	3.9	3.1	2.4	2.8	2.5	3.1	3.5	3.0
Bronchitis	12.7	27.2	46.5	59.4	87.4	49.6	28.4	49.0
Pneumonia	70.5	71.6	76.2	91.1	127.8	85.1	75.9	85.2
Chronic interstitial pneumonia	1.1	1.0	1.7	1.3	1.2	1.3	3.4	1.3
Other diseases of respiratory system	11.9	15.2	14.8	16.4	20.1	15.7	17.6	15.8
Ulcer of stomach	7.3	8.9	10.2	11.0	13.3	10.2	7.6	10.4
Ulcer of duodenum	7.0	6.4	5.1	5.6	6.6	5.6	6.1	6.0
Appendicitis	15.1	12.7	7.9	7.5	6.2	8.9	7.3	8.9
Hernia	1.9	2.5	3.1	4.0	4.5	3.4	2.4	3.6
Intestinal obstruction	6.4	5.5	4.4	5.4	6.2	5.2	7.0	5.4
Cirrhosis of liver	15.6	17.9	6.3	7.1	8.3	9.6	12.3	9.8
Other diseases of digestive system	22.5	19.1	15.9	15.3	18.7	16.7	25.1	17.3
Acute nephritis	2.9	4.8	4.5	3.9	4.8	4.3	2.9	4.1
Chronic nephritis	34.3	38.9	33.4	31.4	36.7	34.5	36.9	35.1
Diseases of the prostate	4.0	4.4	3.8	2.9	3.2	3.7	2.3	3.6
Other genito-urinary diseases	8.2	7.8	7.5	8.8	11.4	8.3	8.9	8.6
Old age	0.5	0.9	1.5	1.4	3.3	1.7	0.5	1.5
Suicide	28.1	31.0	22.0	21.6	23.7	24.3	37.7	24.8
Accident	39.9	34.5	46.8	63.8	59.2	49.3	97.2	50.3
Other causes... ..	54.0	48.9	48.0	45.9	49.0	48.0	75.7	48.0

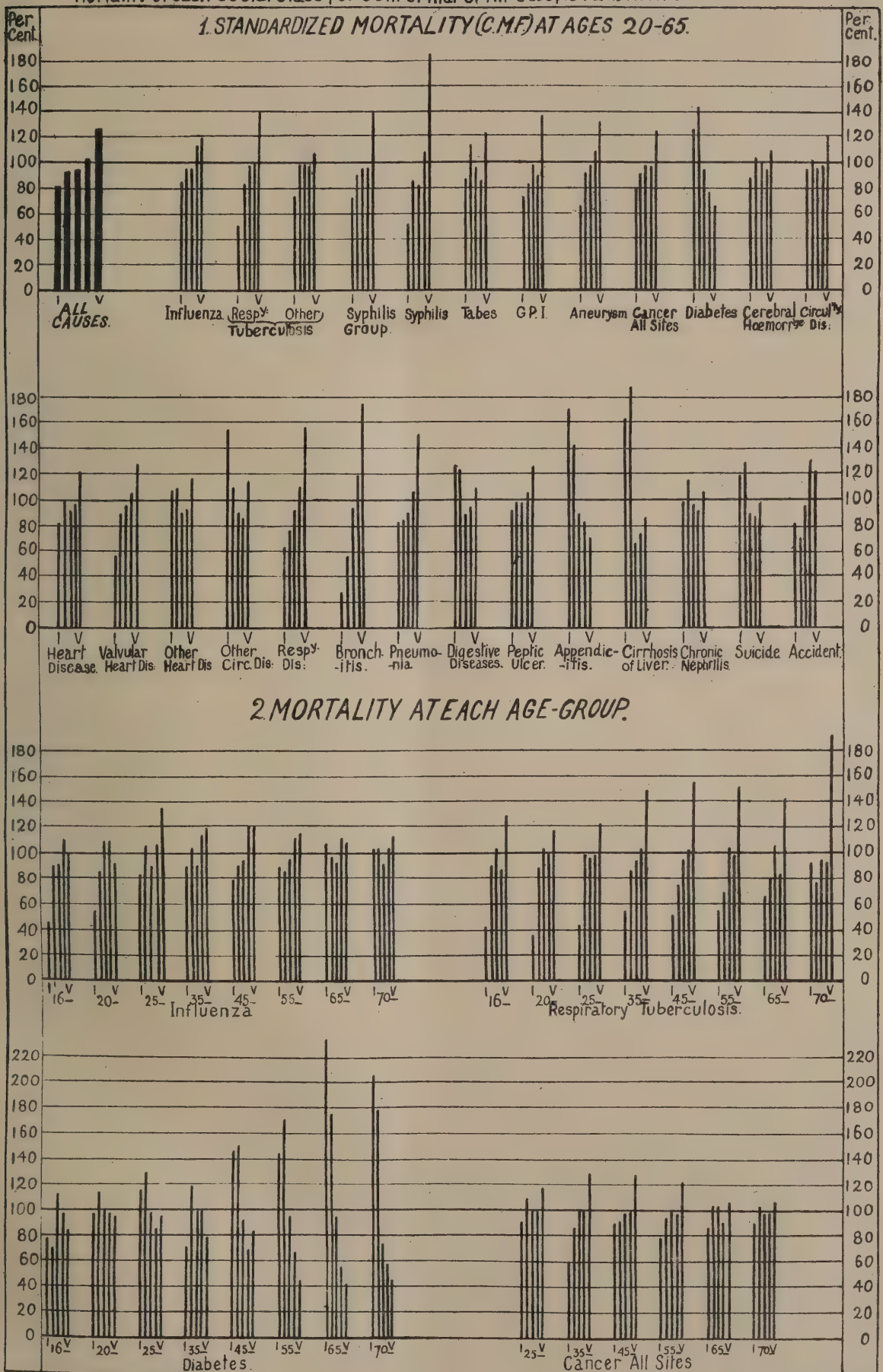
* For the comparative mortality figures for Cancer of different sites, see Table 4 on page xxiii.

It may, however, be due to these diseases of later life not invaliding men sufficiently young to qualify them for inclusion with the never occupied. Such mortality from these diseases as is experienced by the never occupied may therefore be looked upon as having no connexion with their lack of occupational record, and as it occurs at ages at which the numbers of the never occupied are grossly overstated, their recorded mortality from these causes is naturally low.

Table G shows that whereas total mortality is returned as in excess for the never occupied at all ages up to 55, the corresponding excess for cancer mortality ceases after 35. This may be an effect of the cause suggested above for the low C.M.F.s of the never

DIAGRAM 3. SOCIAL DISTRIBUTION OF MORTALITY FROM VARIOUS CAUSES

Mortality of each Social Class per cent of that of All Occupied and Retired Males.



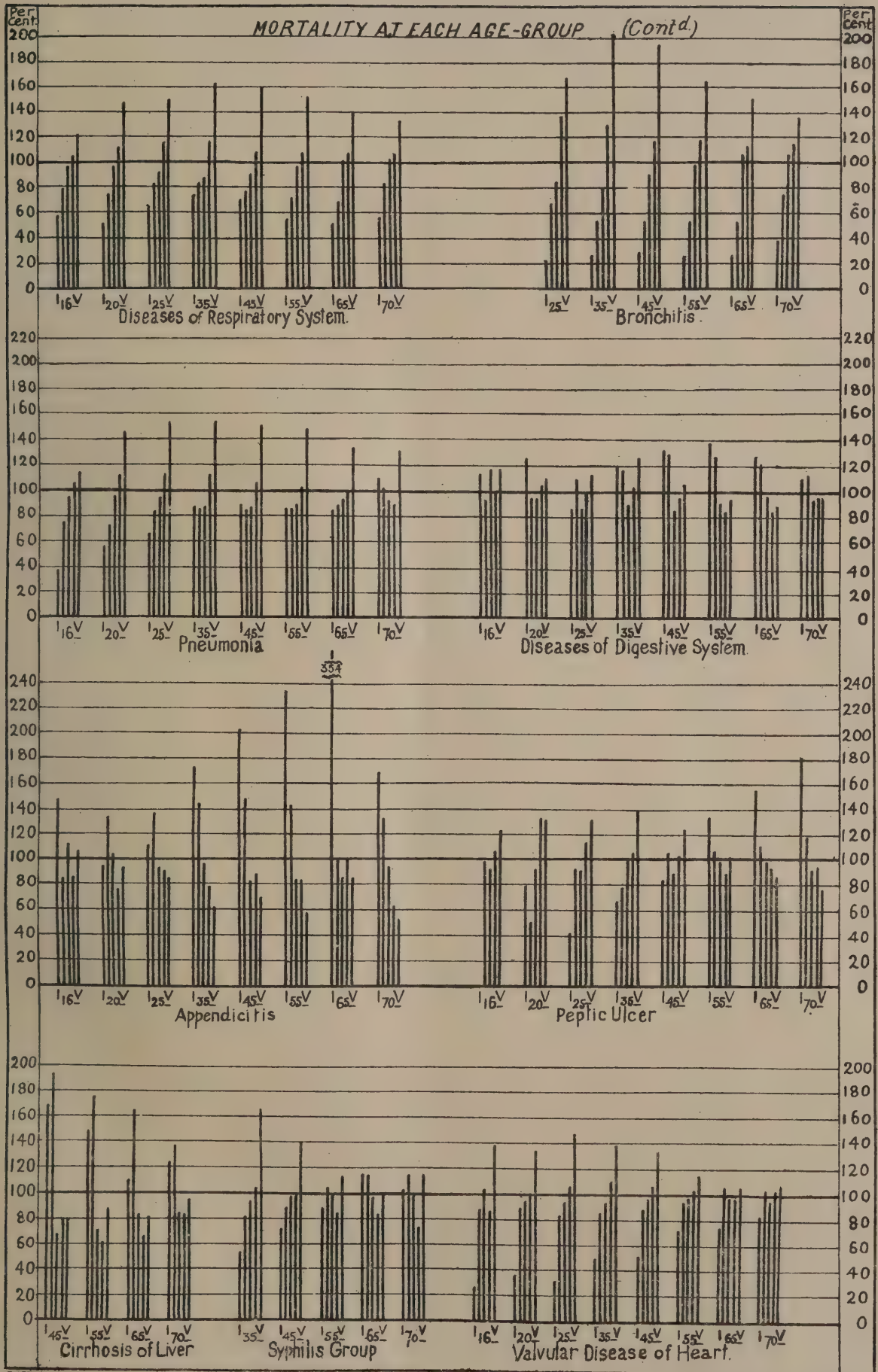


TABLE 3.

Proportion of Standardized Mortality (C.M.F.) of the Five Social Classes, of All Occupied and Retired Civilian Males, of the Never Occupied, and of All Males from certain Causes to that of All Causes taken as 1,000.

	Social Class.					Occupied and Retired Civilians.	Never Occu- pied.	All Males.
	I.	II.	III.	IV.	V.			
All causes	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Influenza	37	36	36	41	34	36	37	36
Respiratory tuberculosis	99	146	168	163	182	164	174	166
Other tuberculosis	12	14	14	13	12	14	37	14
Syphilis, etc.—	24	27	26	26	31	27	38	29
Syphilis	2	3	2	3	4	3	4	3
Tabes dorsalis	5	6	5	4	5	5	5	5
General paralysis of insane	12	12	13	12	15	13	21	14
Aneurysm	5	6	6	7	7	6	8	7
Cancer, all sites	126	125	134	123	125	128	57	126
Chronic rheumatism etc.; gout	3	3	4	3	3	3	2	3
Diabetes	19	19	12	9	6	12	11	12
Alcoholism	1	3	1	1	1	1	4	1
Cerebral hæmorrhage, etc.	49	49	47	42	39	45	28	45
Other diseases of nervous system	32	32	31	31	32	31	135	34
Valvular disease of heart	44	61	64	67	64	63	39	63
Other heart disease	86	76	62	60	60	66	45	64
Arterio sclerosis	39	24	20	17	19	21	15	20
Other diseases of circulatory system	5	3	3	3	2	3	3	3
Bronchitis	16	29	49	59	69	50	23	48
Pneumonia	87	76	80	90	102	85	63	84
Chronic interstitial pneumonia	1	1	2	1	1	1	3	1
Other diseases of respiratory system	15	16	16	16	16	16	15	16
Ulcer of stomach	9	9	11	11	11	10	6	10
Ulcer of duodenum	9	7	5	6	5	6	5	6
Appendicitis	19	13	8	7	5	9	6	9
Hernia	2	3	3	4	4	3	2	4
Intestinal obstruction	8	6	5	5	5	5	6	5
Cirrhosis of liver	19	19	7	7	7	10	10	10
Other diseases of digestive system	28	20	17	15	15	17	21	17
Acute nephritis	4	5	5	4	4	4	2	4
Chronic nephritis	42	41	35	31	29	35	30	35
Diseases of the prostate	5	5	4	3	3	4	2	4
Other genito-urinary diseases	10	8	8	9	9	8	7	8
Old age	1	1	2	1	3	2	0	1
Suicide	35	33	23	21	19	24	31	24
Accident	49	37	49	63	47	49	80	50
Other causes... ..	67	52	50	46	39	48	62	47

occupied in Table 2 from the diseases of later life. Only if attacked, as by sarcoma, early in life, is a man likely to die from cancer after being throughout his life prevented by it from taking up any occupation. The man attacked by cancer at the usual age of onset has followed an occupation before his attack.

The same table shows that with few exceptions all causes of death are returned, as might be expected, as in large excess for the never occupied in early manhood, but that this excess rapidly dwindles to an absurd deficit (due presumably to omission of the former occupations of retired men on the census schedules, *see* Appendix A, page 118) in later life. But it is not apparent why this dwindling should progress so much more rapidly for cancer than for other causes. So far as it is due to over-statement of the numbers of the never occupied, cancer should be affected similarly to other causes, so presumably it is

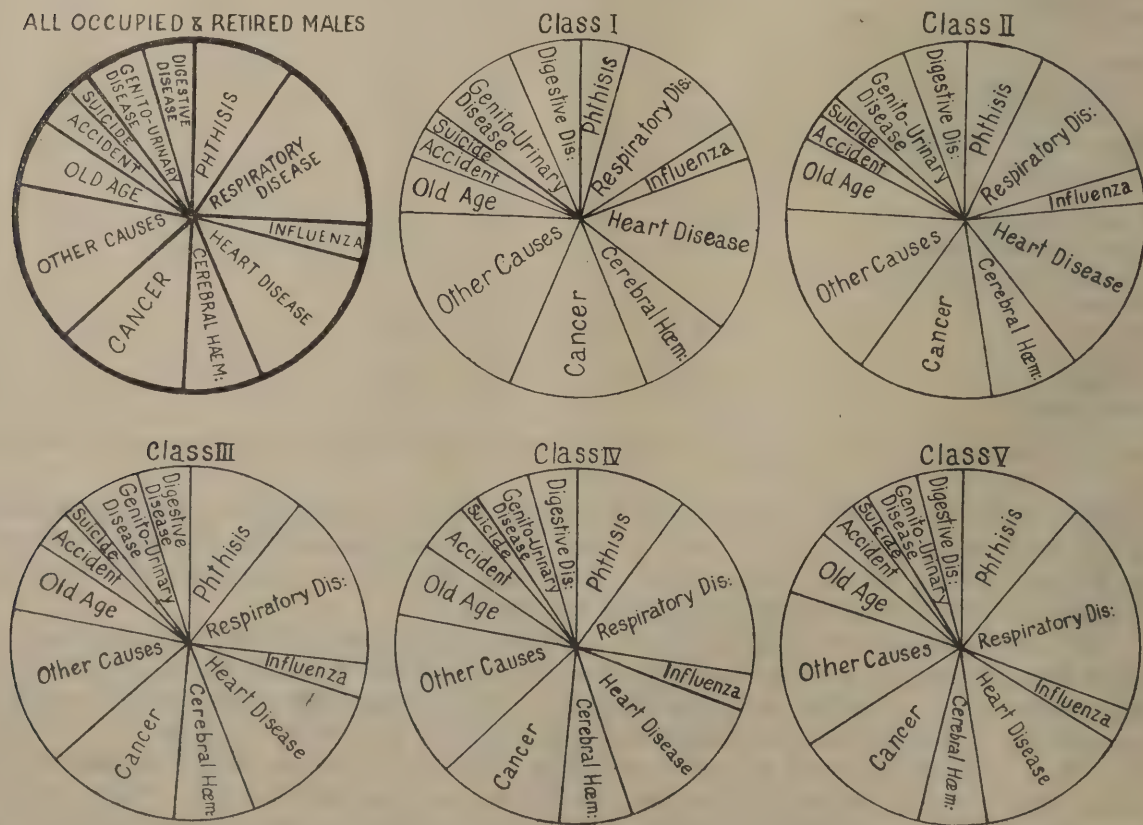
the deaths which are responsible for this peculiarity of cancer mortality distribution. These may be more limited (for the never occupied) to early life in the case of cancer than of other diseases for the reason suggested above—that instances of very prolonged invalidism from cancer are comparatively rare. But the data for the never occupied are evidently so defective that there is little profit in speculation as to the causes of the peculiarities of their record in Table G.

Much the greatest excesses for the never occupied in this table are those for diseases of the nervous system at ages under 35. It is tempting to think of the lunatic population in this connexion, but so few of their deaths are allocated to insanity that lunacy cannot wholly account for the excess. Presumably much of it is genuine, chronic forms of nervous diseases first invaliding their victims and preventing occupation, and later causing death.

The degree in which each of the chief causes of death contributes to the total mortality of each social class is shown in Tables 2 and 3, and Table D shows the extent to which the standardized mortality of each class from certain causes exceeds or falls short of the general average. The most noteworthy of these ratios are expressed in graphic form by Diag. 3, the first portion of which, dealing with ages 20–65 jointly, is based on Table D. The remainder of the diagram, illustrating the social distribution at different ages of mortality from some of the principal causes of death, is derived from Table G. The features of this diagram will be considered in the following pages as the causes of death dealt with are discussed.

A similar comparison to that of Table 3, showing the share contributed by each cause of death dealt with to the total mortality of each social class, is made in Diag. 4. This, however, differs from Table 3 in making no allowance for differences in age constitution between the five classes, and in including all ages, whereas Table 3 is restricted to 20–65. It is based on the total deaths from each cause recorded on pages 2–5, as it is of interest to compare these as well as those at certain ages only. The low Class I phthisis ratio in Table 3, for instance, might conceivably apply to ages 20–65 only, but Diag. 4 shows that it holds good for the whole span of life. Phthisis and respiratory disease in general cause a far higher proportion of deaths among the poor than the well off, but the converse statement applies to disease of the digestive and genito-urinary systems. Diag. 4, however, merely summarizes the results of the cause distributions illustrated in detail in Diag. 3, which may now be considered *seriatim*.

DIAGRAM 4.—COMPARATIVE FREQUENCY OF VARIOUS CAUSES OF DEATH IN THE FIVE SOCIAL CLASSES—ALL AGES.



Distribution Cause by Cause.

Influenza.—Table D shows that this cause is returned as varying definitely, though not greatly, with social class. In proportion to the numbers living it is commonest, with an excess over average of 18 per cent., in Class V, but in proportion to total deaths, allowing for differences of age, it is least common (3·4 per cent. of all causes, Table 3) in this class. The range of variation, from 83·5 per cent. of average for Class I to 118·1 per cent. for Class V, for ages 20–65 jointly (Table D and Diag. 3), is very much greater in youth and early manhood (Table G and Diag. 3), while in old age, 65 and upwards, there is little class variation. The Class I minimum is especially marked at 16–20, when Class I mortality is but 45 per cent. of average, and the Class V maximum at 25–35, when mortality for this class reaches 133 per cent. of average. But the position is better described in Diag. 3 than it can be by any verbal repetition of the facts there depicted.

The occupational variation of mortality from this, as from other causes, can be studied in Tables C and D. It ranges from 6·2 for barristers to 106·7 for cutlery grinders—respectively 17·0 and 293·1 per cent. of the C.M.F. for all occupied and retired males, 36·4. The exceptionally low rate for barristers is largely due to the fact that of nine deaths at all ages only one occurred at 20–65, instead of the five to six (5½) required to accord with the experience of all occupied and retired males in regard to age distribution of influenza deaths.

It may be seen from Table D that on the whole the several occupations range themselves to a considerable extent in social class order. The only Class I occupation with an influenza ratio of more than 1,000 is medical practitioners (1,277), auctioneers (986) coming next. Plainly influenza is a very definite occupational risk for the doctor. The allied calling of dentistry, which does not involve exceptional exposure to influenza infection, occupies position 17 (*see* page liii) from this cause, with a ratio of 585, the doctors' position being 141 (Table F). The highest influenza rates are returned largely by occupations involving exposure to dust or other respiratory risk, the highest ratios in Table D being those for cutlery grinders (2,931), brass foundry furnacemen and labourers (2,212), cotton strippers and grinders (2,121), iron miners underground (2,085), file cutters (2,071) and slate masons (1,964). These six occupations include two, cutlery grinders and cotton strippers and grinders, holding almost similar positions for bronchitis, and two others of high bronchitis mortality, but the bronchitis rates for iron miners and slate masons are low.

The correlation between the influenza C.M.F.s of the occupation groups in Table C and their C.M.F.s for bronchitis and pneumonia, respectively, is as follows :—

Influenza and bronchitis	..	..	$r = + \cdot 491 \pm \cdot 040$
Influenza and pneumonia	..	..	$r = + \cdot 416 \pm \cdot 044$

In both cases, as also in those of other correlations quoted later, the 178 occupation groups of Tables C, D, and F have been reduced to the 164 numbered groups of pages 5–95 by exclusion of sub-divisions already included in a more comprehensive group, as cutlery grinders in grinders of metal, which would otherwise be taken account of twice. All correlations are based on the 164 C.M.F.s except in a few instances, noted as they occur, in which an outstanding rate had an inadequate basis of fact. Fairly high association between influenza and respiratory mortality is only natural, as influenza deaths are generally due to respiratory complications, so conditions lowering pulmonary resistance must increase both forms of mortality.

Respiratory Tuberculosis mortality varies greatly and regularly with social class, from 49 per cent. of average in Class I to 140 per cent. in Class V (Table D). This correlation with social circumstance is shared in even greater degree by bronchitis, but social variation for pneumonia is distinctly less than for phthisis, so phthisis varies socially to much the same extent as non-tuberculous respiratory disease as a whole (phthisis 489–1,401, respiratory disease 634–1,559). Phthisis is evidently a potent cause of invalidism, as evidenced by the extent of the excess of the rate for the never occupied in Table 2 over that for the occupied and retired. Mortality from other forms of tuberculosis, not of great importance at the ages (20–65) dealt with, varies less than, but in the same way as, the respiratory form (Diag. 3). Its average C.M.F. for all classes of 13·8 (Table 2) is significantly departed from only by Classes I (10·1) and V (14·8), the corresponding ratios being 732 and 1072.

The social distribution of phthisis mortality at different ages is displayed in Table G and Diag. 3. In middle life, 35-55, it increases regularly from Class I to Class V, but earlier and later in life the association with social status is not so great. In all but the last of the age periods dealt with, however, the rate is lowest for Class I, and in all eight it is highest for Class V. The Class I advantage is very pronounced in early life, and gradually decreases with increasing age, till at 70— it has almost disappeared. It is greatest of all at 20-25, when Class I mortality is little more than one-third of average. The disadvantage of Class V on the other hand, though considerable at all periods of life, increases with age to a maximum at 70—, when mortality for this class is almost double the general average, and for no other class as much as average. This is of interest in connexion with the suggestion sometimes made that the low ratio of tuberculosis to respiratory disease, especially bronchitis, in old age in this country, as compared with others, is due to ascription to bronchitis, etc., of deaths really due to tuberculosis. If this were an important factor one would expect to find it most in evidence (in the shape of low senile tuberculosis mortality) for Class V, not least. It may be noted that the social mortality ratio is reversed for Classes III and IV at five ages out of the eight. This must be partly because, as pointed out below, the highest rates of all are met with in some of the highly specialised Class III (skilled) occupations, and partly a consequence of the inclusion in Class IV of agricultural labourers, who form 21 per cent. of its membership, and whose phthisis C.M.F. ratio is only 588 (*see* page x).

The mortalities for separate occupations are very largely governed by their social circumstances. Thus the lowest ratios in Table D, apart from the two lowest of all—builders' foremen (221) and farm bailiffs and foremen (247), which are open to the suspicion attaching to other rates for foremen for the reasons discussed on page lv, are all for Class I occupations—barristers (247), ministers (258), bank officials (289), Anglican clergy (321), insurance officials (357). Next to these come farmers (Class II) (414), and then two other foremen groups, coal (431) and wood-working (435), followed by another Class I group, medical men (462). Other ratios of less than 500 per 1,000 are for railway signalmen (464), railway guards (468) and railway officials (479).

The occupations with highest phthisis mortality are chiefly to be found in Classes III and IV, rather than in Class V, even though mortality for the latter, taken as a whole, exceeds that for Class III by 43, and for Class IV by 40 per cent. This is partly because the number of occupational groups in Class V is small, only six of the 178 groups being wholly, and nine partially, composed of Class V occupations. Moreover, the social classes include the total occupied and retired civilian population, but the occupational groups 1-164 (pages 5-95) only 82 per cent. of it. But the chief reason seems to be that the most sharply differentiated occupational conditions are met with chiefly in skilled trades, which are assignable to Classes III or IV. Consequently the occupations most exposed to silica or other occupational phthisis risk belong to Classes III and IV, as shown by the following list of those with over three times average phthisis mortality, the social class and the mortality ratio (Table D) being given in each case: slate masons (III), 3,426; metal grinders (IV), 4,256, of whom grinders in the cutlery trade, 7,878; tin and copper miners (III and IV), 8,847, of whom underground workers (III), 12,607. The Class V occupations with highest phthisis mortality on the other hand—porters (1,799), dock labourers (1,903) and costermongers (2,289)—are carried on for the most part in the open air, and without exposure to any specifically deleterious agency. In their case it seems rather to be the social, and in the other (Classes III and IV) the occupational, circumstances which are responsible for excessive mortality, and the effect of the former is never so great as in a few exceptional instances that of the latter can be.

Correlation ratios have been calculated between the C.M.F.s (Table C) for phthisis and certain other causes—bronchitis, pneumonia, diabetes, and cirrhosis of the liver—of the 164 occupation groups. The omission of barristers reduces the number to 163 for cirrhosis of the liver. The results are as follows :—

Respiratory tuberculosis and bronchitis	..	$r = + \cdot 528 \pm \cdot 038$
" " pneumonia	..	$r = + \cdot 278 \pm \cdot 049$
" " cirrhosis of the liver	..	$r = + \cdot 059 \pm \cdot 053$
" " diabetes	..	$r = + \cdot 178 \pm \cdot 051$

The association with bronchitis is evident on inspection of Table D or Table F, and will have to be noted repeatedly in dealing with causes of death in different

occupation groups. To some extent, no doubt, it may be due to ascription to bronchitis of mortality for which tuberculosis is really responsible ; but apart from this, there can be little doubt that similar environmental conditions promote both mortalities. Each varies to an exceptional extent with social circumstance, the phthisis ratio rising, as already seen, from 489 for Class I to 1,401 for Class V, while the corresponding increase for bronchitis is still greater—from 256 to 1,762. But even apart from this, definitely occupational risk, often connected with exposure to silica, is frequently excessive for both causes, instances of this being cutlery grinders, tin and copper miners, potters, earthenware and china kiln and oven men, brass foundry furnacemen and labourers, brass finishers, and masons. Cases like those of slate masons, where phthisis is high and bronchitis low, and cotton strippers and grinders, where phthisis is low and bronchitis high, are rare. So as both forms of mortality are promoted by the same social and occupational circumstances, their association is naturally high.

The correlation with pneumonia, though much less, is still significant as compared with its probable error, notwithstanding the clinical observation that the two diseases are seldom met with in the same subject. This fact, of course, is not incompatible with their occupational association, since the individuals affected need not be the same. The association with cirrhosis of the liver was tested as an index to the influence of alcoholism as a cause of phthisis, cirrhosis being regarded for the reasons stated on page xlv as the best available index of alcoholism in occupations. It will be seen that no significant result was obtained.

Comparison with diabetes mortality might have been expected to yield a definitely negative instead of a doubtfully positive correlation, notwithstanding the tendency of the two diseases to association in individuals, in view of their opposite social distributions, the diabetes risk being greater for the more comfortably situated classes. But on examination it proves that this correlation is much affected by the records for a few occupations entailing excessive phthisis risk, notwithstanding evidence (high mortality from digestive disease, chronic nephritis, and cerebral hæmorrhage, as well as diabetes) of a very adequate food supply. For these occupations there seems to be a very definite appeal in the words, "let us eat and drink, for to-morrow we die." Tin and copper miners and metal grinders are the most outstanding examples of this conjunction of mortalities, and if they are omitted the 162 occupations remaining yield the result $r = -0.102 \pm 0.052$. This is, of course, quite inconclusive, but the previous positive sign has become negative.

Syphilis and its consequences—*tabes dorsalis*, *general paralysis of the insane*, and *aneurysm*—appear to have the same social distribution, so far as mortality is concerned, as phthisis, but their special amenability to treatment must be borne in mind. Whatever the prevalence of these diseases, however, that portion—doubtless but a fraction of the whole—of the total mortality for which they are responsible which is returned upon death certificates, increases down the social scale from 72.7 per cent. of average in Class I to 139.9 in Class V. But how far this contrast is ascribable to difference in prevalence of the disease, how far to difference in effectiveness of treatment, and how far to varying degree of suppression of the facts on death certificates, it is very difficult to say.

Some light, however, may be thrown upon this matter by comparison of the mortalities from each of the four diseases separately which are grouped together, as syphilitic in nature, in Tables C and D. Suppression of the facts in certification is far less likely for general paralysis of the insane (G.P.I.) than for syphilis, for at least two reasons : (1) that recognition of the syphilitic implication of G.P.I. is so recent that it still entails much less difficulty than syphilis as a statement of diagnosis, and (2) that nearly all G.P.I. patients have to be admitted to asylums or other institutions before their death. Appendix B to Part I of the Registrar-General's Statistical Review for 1925 shows that of 6,565 deaths of males in England and Wales from this cause during 1921–25, 79 per cent. occurred in asylums, 11 per cent. in workhouses, hospitals and other institutions, and only 10 per cent. elsewhere—*i.e.*, for the most part in their own homes. So far, then, as syphilitic mortality in the wider sense is contributed to by G.P.I.—and this accounts for almost 50 per cent. of the deaths so classified—certification may be assumed, instead of being specially unreliable, to be specially good, being in the hands of institutional experts, who are not at all likely to substitute another diagnosis on the death certificate when the facts call for one of G.P.I.

The C.M.F.s for syphilis etc. of the five social classes are made up as follows :—

	Occupied and Retired Civilians.	Class I.	Class II.	Class III.	Class IV.	Class V.
Syphilis	2.79	1.43	2.41	2.29	3.08	5.18
Tabes	4.88	4.22	5.44	4.61	4.19	5.96
G.P.I.	13.25	9.62	11.03	12.73	11.92	18.28
Aneurysm	6.27	4.05	5.80	6.12	6.90	8.21
Total (syphilis etc.)...	27.19	19.32	24.68	25.75	26.09	37.63

The totals for the whole syphilitic group obtained by aggregating the C.M.F.s for its ingredients differ in detail from those stated in Table C, obtained by dealing with this mortality as a whole ; but the differences are so slight that they may be neglected. It will be seen that the social distribution of these total syphilis rates closely resembles that of mortality from all causes (Diag. 3). There is little difference between Classes II to IV, but the rate for Class I is considerably less, and that for Class V very much greater, than for these. But the advantage held by Class I over Classes II–IV applies chiefly to syphilis so returned and aneurysm, while the Class V excess applies to all four constituents of the group (Diag. 3). Both syphilis and aneurysm show a general tendency to increase throughout the social scale from I to V, but with smaller differences for the central classes (II–IV) than at the extremes. But for G.P.I. the differences between Classes I–IV are comparatively small, the chief feature being large excess for Class V, while tabes shows no consistent variation of mortality with social class, apart from exhibiting the Class V maximum common to all four members of the group. The rates for G.P.I., much the largest constituent of the group, probably give the best indication of the social distribution of syphilitic mortality, for the special excess of class difference from syphilis so returned may be due to suppression of the facts, and occupational strain must contribute to the class differences for aneurysm.

On the whole, then, it seems that the registered deaths give a much better indication than is sometimes supposed of the distribution of mortality from syphilis ; that the returns for both the more and the less accurately certified ingredients of this mortality support the view that it increases from above downwards along the social scale, though probably to a smaller extent than the figures would indicate ; and that excessive mortality for Class V is the outstanding feature of the distribution, though this may, as already suggested, be due quite as much to inferior treatment as to greater infection. The figures lend no support to any idea that tabes has a differential incidence upon manual, and G.P.I. on mental workers, for both the advantage of Class I, which may be taken as representative of mental workers, and the disadvantage of Class V, that most exclusively representative of manual workers, are greater for G.P.I. than for tabes.

As regards the mortalities returned for separate occupations, Table F shows that six recorded no deaths at all, but of these five were very small occupations, each with less than 10,000 years of life at risk. The sixth, however, wool and worsted spinners and piecers, is on a different scale, with 30,867 years of life. Apart from these six occupations with no mortality, those returning the lowest rates are as follows, the ratio of the C.M.F. in Table D being stated in each case : ministers, 85 ; Anglican clergy, 114 ; iron miners, 140 ; bank officials, 207 ; railway officials, 214 ; and 'bus and tram conductors, 247. These are all occupations of considerable size, years of life varying from 33,969 for bank officials to 80,712 for 'bus and tram conductors. At the other end of the scale come brewers, 4,808 ; actors, 4,649 ; waiters, 2,598 ; costers, 2,284 ; bargemen, 2,144 ; barmen, 2,137 ; musicians, 2,059 ; wool sorters, 2,041 ; and shipyard labourers, 2,026, no other occupation returning double the average mortality. All of these, except brewers and wool sorters, are occupations of considerable size, with over 25,000 years of life in each case, so there can be little doubt as to the reality of the excess.

The character of the occupations returning highest mortalities from syphilitic diseases suggests the possibility of a correlation with alcoholism, as represented by cirrhosis of the liver. This has been tested for the 164 occupations, with the result :—

$$r = + .401 \pm .044$$

so that the inference of association appears to be justified.

Correlations of mortality from syphilis etc. with that from cancer, distinguishing the tongue and the œsophagus, are stated on page xxvi.

Cancer mortality shows very definitely the same type of social distribution as that from phthisis, increasing from a minimum of 79·8 per cent. of average in Class I to a maximum of 122·9 per cent. in Class V, and for certain sites grouped as "exposed" in Table 4 (see page xxiv and Diag. 5), which account for 51 per cent. of the total cancer mortality, from a minimum of 58 per cent. for Class I to a maximum of 140 per cent. for Class V. Moreover, it is almost certain that these figures understate the real contrast, for so large a proportion of cancer in males is of inaccessible sites that imperfection of diagnosis leading to understatement in some degree of the facts may be assumed, and this understatement presumably increases down the social scale. This differential distribution is much more clearly shown by the returns for 1921-23 than by those for 1910-12, a statement applying also to various other causes (see page xiii and Diag. 2).

It thus appears that a large proportion, at least, of cancer mortality is of a highly preventable nature, for we must suppose that if the conditions of life of all sections of society could be assimilated to those of its upper ranks mortality from cancer of the exposed sites would fall for all classes to the Class I level. Indeed it is very possible that knowledge of the preventable causes accounting for the difference might provide the means of reducing if not eliminating these forms of cancer for all causes, for these causes might well be found to apply in varying degree to all sections of society.

But though cancer mortality increases from social Class I to Class V the chance of ultimately dying from cancer at any age under 65 is seen from Table 3 to be much the same for all classes. For this table shows that of the deaths annually occurring in the standard population under the mortality conditions of the five classes, the proportion due to cancer would vary only from 12·3 per cent. for Class IV to 13·4 per cent. for Class III, and continued application of these conditions would imply similar variation in the chance of ultimate death from cancer. But the chance of ultimately dying from cancer is a different matter altogether from the death-rate. It is very considerable at birth, when the death rate is *nil*, and reaches its maximum in middle life, after which it steadily declines whilst the cancer death-rate rises. Thus, on the data for England and Wales during 1901-10 (using Life Table No. 7 for that decade, and the cancer mortality recorded for it), the chance for males of ultimate death from cancer increased with age from ·0618 at birth to ·0902 at 50, and thereafter declined, reaching ·0258 at 85. For females the chance at birth was ·0862 (*i.e.*, of 10,000 infants born 862 were fated to die from cancer, had the conditions remained unchanged), and reached a maximum of ·1154 at 40. But cancer mortality during the same ten years increased steadily for both sexes from a minimum in childhood to a maximum in old age (75-85). The reason for this, at first sight, paradoxical result is that after middle life is past, though cancer mortality continues to increase with age, mortality from other causes increases faster, so that as life advances increasing numbers are saved from death from cancer by dying from some other cause.

It has indeed been contended (Brownlee, Medical Research Council Special Report Series, No. 60) that this is the proper point of view from which to regard cancer mortality, the reason for this view being that cancer is due to ageing of the tissues, and that, as this ageing occurs more rapidly in some environments than in others, allowance should be made for it in comparing the mortalities associated with the environments. But in the first place it has recently been suggested that age in itself does not predispose to cancer, the point being taken that old age may function merely by providing opportunity for prolonged irritation. (Murray, Imperial Cancer Research Fund 8th Scientific Report, p. 79.)

Accepting, however, the general view that the association between cancer and senescence is of a more intimate nature than this, it may be pointed out that use of the chance at any age of ultimate death from cancer (only one of two life table measures of mortality discussed by Brownlee) as the measure of cancer mortality implies a novel conception of the meaning of "mortality." We do not ordinarily regard the cancer mortality of infants as high. Both points of view are of interest, and they are, of course, in no way opposed to each other. But as there seems no reason why mortality from cancer should be measured differently from that due to any other cause, Table 2 will probably be accepted by most readers as showing that cancer mortality increases from Class I to Class V, even though Table 3 shows that for men of working age the chance of ultimately dying from cancer is much the same in all ranks of life.

Definite demonstration of this relationship is of the more interest in view of the fact that examination of the matter in the Medical Research Council Special Report

No. 99 (1926) enabled its authors to come to no certain conclusion except that Brownlee found the rates for textile workers, coal miners, and agricultural labourers (the three industrial groups excluded in 1911 from the general social gradation) significantly below those for other workers. So far, indeed, has the decrease of cancer mortality with increase of social status been from receiving general acceptance, that a recent (1924) view is quoted (without approval) in the same report that "better living predisposes to a higher cancer death-rate," and a recent investigation of the subject based on the body weight and other records of cancer patients in America has led Hoffman to the conclusion that cancer is a disease of over-nutrition ("Cancer and Over-nutrition," Congress of the Royal Institute of Public Health, Ghent, June, 1927). The matter is of real importance in relation to the causation of cancer, for as the authors of the Special Report No. 99 quoted observe in regard to the limited social variation of mortality accepted by them, "we have here a problem of very great interest in the ætiology of the disease."

In view of this importance special tabulation has been made by social class for all the sites of cancer distinguished in the Statistical Review (*see* Review for 1923, Text, Tables XLIV and XLV). Such detailed differentiation by site is clearly out of the question for separate occupations, but may be found to yield interesting results when applied to the larger populations of the social classes. The C.M.F.s resulting from this application will be found in Table 4, and the numbers of deaths on which they are based in Appendix C.

The C.M.F. ratios recorded in Table 4 are graphically compared for the five social classes in Diag. 5, which forms an elaboration by site, for cancer, of the picture of social distribution of mortality provided by Diag 3.

The arrangement of the sites in Table 4 and Diag. 5 has been designed to differentiate those proving to manifest definite social grading. First the alimentary canal is dealt with, which may be seen from the table to account for 64 per cent. of the total cancer mortality of males (at 20—65) during 1921—23. This proportion compares with that of 63·3 for males and 31·6 for females, at the same ages, in 1911—20 (Statistical Review, 1921, Tables XXXVIII and XXXIX). But the subdivisions of the alimentary canal are arranged in two groups, because it proves that social grading is very pronounced for all sites above the pylorus, and is not observable to a significant extent as regards any portion of the intestine (Diag. 5). Such social differences as are met with for intestinal sites are of an order which renders them open to explanation as the result of better diagnosis in the higher social grades. Thus the rates both for "colon" and for sigmoid flexure are highest for Class I, and that for "intestine" (part unstated) lowest for the same class; but for the whole alimentary canal below the pylorus the C.M.F. varies only from 24·0 (Class IV) to 27·1 (Classes I and II), a range which may, taking the uncertainty of diagnosis in this region into account, be regarded as representing uniform mortality for all classes. (It may perhaps be well to point out that the group totals are not necessarily an exact summation of the C.M.F.s for the separate sites in the groups. They are more accurate rates obtained by aggregating the deaths for the groups and calculating the group C.M.F.s from these).

The case is very different above the pylorus. Here the ratio for the aggregate mortality increases without a break from 58 per cent. for Class I to 140 for Class V (Diag. 5). This diagram shows that the increase is regular except for being slight as between Classes III and IV, a point at which the corresponding but greater interruption of increase in Diag. 2 has been shown to be due entirely to the inclusion of agricultural labourers in Class IV. The effect of deducting these from Class IV is there shown, but not that of their transfer to Class III, whose mortality would thereby have been somewhat decreased. In view of the skill undoubtedly implied by their occupation agricultural labourers might perhaps have been assigned to Class III (skilled labour), with advantage to the smoothness of the mortality grading. But there is no means of definitely fixing the appropriate social assignment of any occupation, except a few at the extremes of the series. It can only be estimated empirically, in the belief that while different estimates would show many differences of detail, the general result would tend greatly towards similarity.

Of the upper alimentary sites distinguished, five manifest uninterrupted increase of mortality from Class I to Class V. These are as follows, the percentage ratio of the Class V rate to that for Class I being stated in each case: lip 567, tongue 344, jaw 578, tonsil 650, and stomach 217. Corresponding ratios for the other three, for which increase from I to V is not continuous, are: mouth 277, pharynx 181, œsophagus 170. This grading may be seen from Appendix C to apply very regularly to each of the chief cancer ages as well as to the C.M.F.s summing up these age group rates.

TABLE 4.

Standardized Mortality (C.M.F.) at ages 20-65 years of all Occupied and Retired Civilian Males and of the Five Social Classes from Cancer of various sites, 1921-23.

				Standardised Mortality (C.M.F.).						Ratio compared with that of all Occupied and Retired Civilian Males taken as 100.				
				Occupied and Retired.	I.	II.	III.	IV.	V.	I.	II.	III.	IV.	V.
All Sites	...	...	...	128.4	102.5	118.1	127.1	123.8	157.8	80	92	99	96	123
1	Lip	...	...	1.0	0.3	0.5	0.7	1.4	1.7	30	50	70	140	170
	Tongue	...	...	7.5	3.6	5.5	7.1	7.5	12.4	48	73	95	100	165
	Mouth	...	...	2.2	1.3	1.6	2.2	2.2	3.6	59	73	100	100	164
	Jaw	...	...	3.2	0.9	2.3	3.1	3.5	5.2	28	72	97	109	163
	Tonsil	...	...	1.6	0.4	1.4	1.5	1.7	2.6	25	88	94	106	163
	Pharynx	...	...	1.8	1.6	1.4	1.8	1.8	2.9	89	78	100	100	161
	Oesophagus	...	...	9.7	7.4	8.8	10.1	8.5	12.6	76	91	104	88	130
	Stomach	...	...	29.5	17.6	24.2	29.4	31.2	38.2	60	82	100	106	130
2	Small Intestine	...	...	0.6	0.7	0.6	0.7	0.6	0.8	117	100	117	100	133
	Cæcum	...	...	0.9	1.1	1.1	1.0	0.7	0.8	122	122	111	78	89
	Hepatic and Splenic Flexures	...	...	0.4	0.1	0.5	0.3	0.5	0.3	25	125	75	125	75
	Sigmoid Flexure	...	...	2.2	3.4	2.5	2.2	1.8	2.1	155	114	100	82	95
	Colon, part not stated	...	...	5.7	7.5	6.2	5.6	5.0	5.7	132	109	98	88	100
	Intestine, part not stated	...	...	3.4	2.8	3.6	3.4	3.4	3.6	82	106	100	100	106
	Large Intestine	...	...	9.1	12.0	10.2	9.1	7.9	8.8	132	112	100	87	97
	Total Intestine (excluding rectum)	...	...	13.3	15.4	14.2	13.2	12.0	13.2	116	107	99	90	99
	Rectum and anus	...	...	12.5	11.6	12.8	12.7	12.0	12.2	93	102	102	96	98
3	Larynx	...	...	4.6	3.3	4.4	4.3	4.4	6.2	72	96	93	96	135
	Skin	...	...	3.0	1.9	2.2	3.0	3.6	4.5	63	73	100	120	150
	Breast	...	...	0.2	—	0.3	0.2	0.2	0.4	—	150	100	100	200
4	Peritoneum, Omentum, Mesentery	...	...	0.9	1.3	0.8	1.0	0.9	0.9	144	89	111	100	100
	Pancreas	...	...	3.4	3.5	3.5	3.3	3.0	3.8	103	103	97	88	112
	Kidney and Supra Renal	...	...	1.6	1.1	1.7	1.6	1.5	1.4	69	106	100	94	88
	Bladder	...	...	3.1	3.3	3.0	3.2	2.4	3.9	106	97	103	77	126
	Prostate	...	...	2.9	3.2	3.2	3.0	2.3	2.5	110	110	103	79	86
	Testes	...	...	0.9	0.8	1.5	0.8	0.8	0.7	89	167	89	89	78
	Brain	...	...	0.5	0.8	0.8	0.6	0.4	0.3	160	160	120	80	60
	Bones	...	...	2.2	1.6	2.5	2.3	2.1	1.9	73	114	105	95	86
	Gall Bladder	...	...	0.9	0.9	0.8	1.0	0.8	0.9	100	89	111	89	100
5	Lung	...	...	3.3	3.3	3.6	3.2	2.6	4.1	100	109	97	79	124
	Liver	...	...	8.8	6.2	8.9	8.7	8.8	9.5	70	101	99	100	108
	Abdomen	...	...	0.6	0.7	0.5	0.6	0.6	0.6	117	83	100	100	100
	Neck	...	...	0.3	0.6	0.1	0.3	0.4	0.6	200	33	100	133	200
	Lymphatic Glands	...	...	4.1	3.6	3.4	4.2	3.6	5.6	88	83	102	88	137
	Mediastinum	...	...	1.9	3.6	2.1	1.7	1.9	1.8	189	111	89	100	95
	Other specified sites	...	...	2.0	2.6	2.1	2.0	1.7	2.5	130	105	100	85	125
	Multiple	...	...	0.2	0.3	0.2	0.2	0.1	0.2	150	100	100	50	100
	Site not stated	...	...	0.1	—	0.1	0.1	0.1	0.1	—	100	100	100	100
1	Upper Alimentary Canal	...	...	56.8	33.0	45.6	56.0	57.8	79.3	58	80	99	102	140
2	Intestine and Rectum	...	...	25.8	27.1	27.1	25.9	24.0	25.4	105	105	100	93	98
3	Larynx, Skin, Breast	...	...	8.1	5.1	6.7	7.9	8.3	11.4	63	83	98	102	141
4	Deep-seated sites	...	...	16.4	16.5	17.8	16.7	14.2	16.3	101	109	102	87	99
5	Miscellaneous and ill-defined sites	...	...	21.2	20.8	20.9	20.8	19.8	24.9	98	99	98	93	117
1, 3	Exposed sites	...	...	65.0	37.9	52.3	63.9	66.1	90.9	58	80	98	102	140
2, 4, 5	Other sites	...	...	63.3	64.3	65.8	63.4	57.9	66.5	102	104	100	91	105

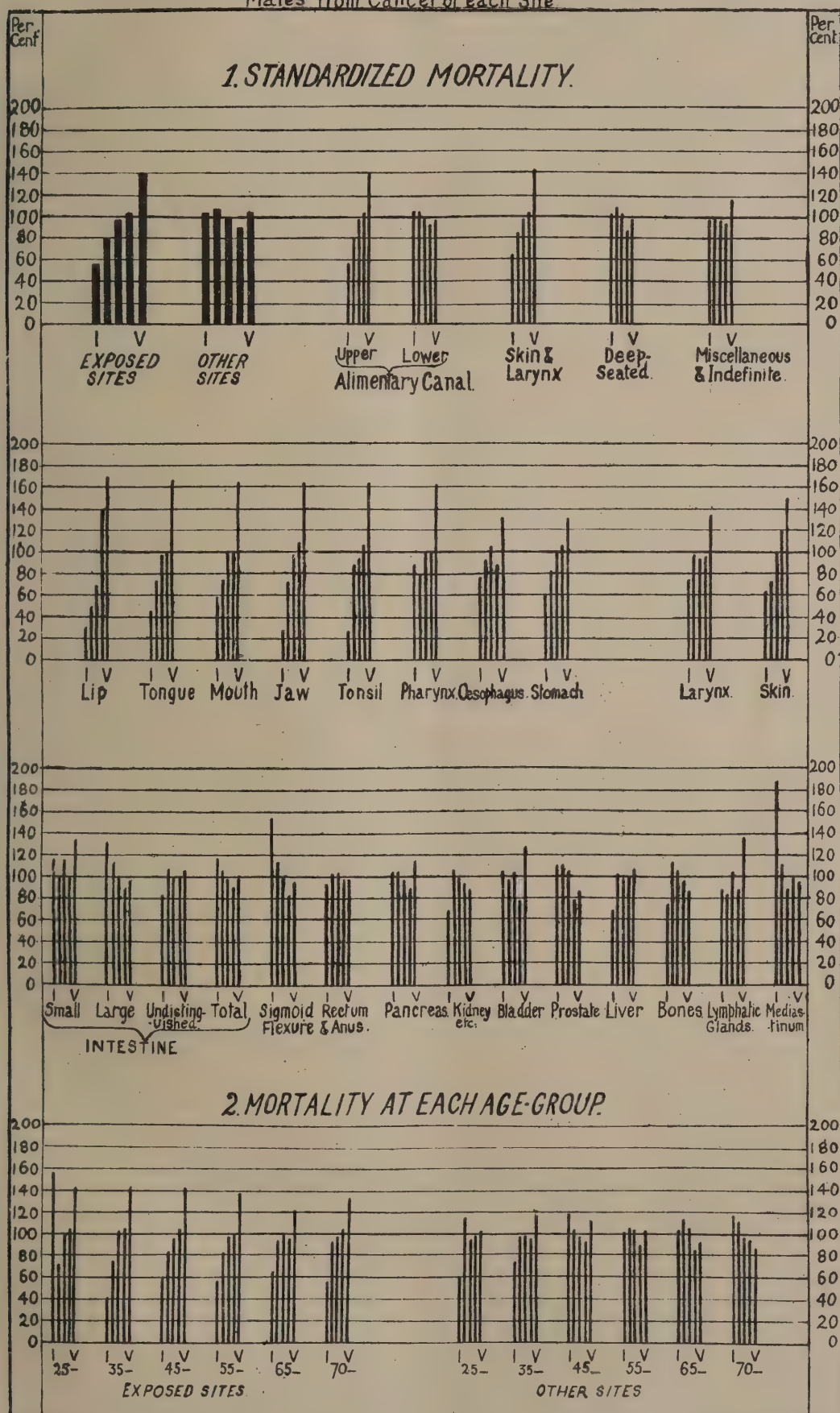
This Class V excess, varying from 70 to 550 per cent. for the upper sites, ceases quite abruptly at the pylorus. The few deaths from cancer of the small intestine, 302 in all, are distributed without significant variation of standardized mortality over all classes, and the same statement applies to the intestine as a whole, and to the rectum and anus. Mortality from intestinal cancer is indeed apparently highest in Class I, but the differences are not comparable with those met with above the pylorus, and the 16 per cent. excess for Class I (over average) may be due to superior certification. This factor may presumably be ruled out for the rectum, and in its case all classes suffer practically alike.

This abrupt contrast between the incidence of upper and lower alimentary cancer may, perhaps, be explained if we regard the regions above the pylorus as exposed to, and those below it as protected from, irritation by environmental influences in the shape of food and drink. For all sites exposed to irritation, larynx, skin, and breast as well as upper alimentary tract, Table 4 shows that much social variation from a Class I minimum to a Class V maximum prevails, whereas for deep-seated sites not subject to influence by the external environment, such as the pancreas and prostate, mortality is very much alike for all classes. The sharp line of demarcation at the pylorus may perhaps be explained on the same grounds as the practical limitation to the supra-pyloric tract of the effects of corrosive poisons. The irritant presumably passes into the stomach almost undiluted, and so capable of damaging all structures encountered on the way as well as, momentarily, the walls of the stomach itself; but, once there, it is greatly diluted by admixture with other gastric contents, and any effects of corrosive poisons upon the intestine are slight as compared with the damage done to the mouth, pharynx, œsophagus, and stomach. The analogy is, of course, not meant to suggest that the carcinogenic irritation to which the upper alimentary tract of the poor man is differentially exposed is of the nature of a corrosive poison—no suggestion at all as to its nature is intended—but merely to provide a possible explanation of the sharp differentiation above and below the pylorus.

Apart from the upper alimentary tract, which accounts for 44 per cent. of the total mortality, the only other sites displaying any noteworthy social gradation are the skin, with which may be grouped the small mortality from cancer of the male breast, and larynx, both of which are obviously subject to environmental influence. The effects of such influence are familiar in the case of the skin, and many of the irritants themselves, such as heat light and Roentgen rays, tar, soot, paraffin, pitch, and so forth, are already known. But it will be seen that the social variation for skin cancer is of much the same order as for other exposed sites, the Class V rate being between two and three times that for Class I. As varying exposure to irritation is known to be the explanation of the differences in skin cancer, it may well explain also the differences of like degree in cancer of other exposed sites.

The remaining sites have been divided from the present point of view into two groups, deep-seated, and miscellaneous or ill-defined. This differentiation may probably be open to much criticism in detail, but that is really of little moment, since the lower section of the table shows that for both groups social differentiation is negligible as compared with the two groups of exposed sites. There is some Class V excess for the miscellaneous and ill-defined, but this may merely mean that certification tends on the whole to be less precise for Class V than for others, though such evidence as there is on this point does not all seem to point in the same direction. The distribution for the deep-seated group of cancers at all events—of which the pancreas, bladder, and prostate are the chief examples—plainly resembles that of intestinal and rectal growths in showing no significant class variation. These sites have been selected as apparently not subject to external environmental influence, though it is just possible that this may not be wholly true of the bladder, if any cases of the aniline cancer met with elsewhere occur in this country. The testis is qualified for inclusion in this group only in that its functions involve no exposure of the gland to environmental influences. Such class differences as are returned for this group, may, in view of the inaccessibility of most of its components, be largely due to variations in accuracy of diagnosis. But it is needless to discuss such details in view of the fact that cancer sites can be divided into two groups of almost equal importance, the one group exposed to external influence, and of mortality highly graded by social class, and the other not so exposed and showing no significant variation of mortality with social class. It will be noticed that the class ratios for groups 1 (upper alimentary tract) and 3 (larynx and skin) are almost identical, but it is difficult to suppose that this can be more than a coincidence. Whatever the irritants causing lower class excess for group 1 may be, they are surely different from those causing it for group 3.

DIAGRAM 5. SOCIAL DISTRIBUTION OF MORTALITY FROM CANCER OF VARIOUS SITES
Mortality of each Social Class percent of that of All Occupied and Retired
Males from Cancer of each Site



It will be seen from Diag. 3 that the social gradation of cancer mortality applies especially to the earlier cancer ages. It is, indeed, not nearly so apparent at 25–35 as ten years later, but the proportion of sarcoma deaths at 25–35 must be large, and the conditions of their occurrence may be entirely different from those applying to carcinoma. As the social gradation of cancer mortality as a whole is entirely due to that of the exposed sites, this feature of its special application to the earlier cancer ages might be expected to be still more pronounced in the case of the exposed sites, but Diag. 5 shows that this is not the case, social gradation persisting in old age for the exposed sites to a far greater extent than for all sites in Diag. 3. But Diag. 5 also provides the explanation, for it exhibits in old age a reversed social gradation (uninterrupted from a Class I maximum of 118 per cent. to a Class V minimum of 88) for “other” sites. This may, with some confidence, be assumed to be a consequence of differential accuracy of certification at these ages (70 and over). There can be little doubt that in extreme old age many cancers escape recognition. Reasons for believing this to be true of our own returns were given in the text of the Statistical Review for 1923 (page 69), and it has been estimated in America that 10 per cent. of all old people die from unsuspected cancer (Wood, F. C., *Journ. Am. Med. Assoc.*, vol. 73 (1919), p. 569). If such under-statement of mortality does in fact exist, it is reasonable to suppose that it will apply least to Class I and most to Class V—at all events, this hypothesis provides an explanation of the limitation of the gradation in question to old age. But if we may look upon the reverse gradation (from a Class I maximum to a Class V minimum) for “other” sites in old age as entirely due to varying precision of certification, then we must suppose that this influence affects also the records for the exposed sites (though probably in less degree since they are on the whole more accessible), in which case the social gradation for them in old age, large as it appears, is understated.

Finally, it may be noted, in support of the differentiation between exposed and other sites here employed, that a comparison of sex mortalities similar to Table 4 shows broadly speaking a similar picture—large male excess for the exposed sites alone, with the same line of demarcation at the pylorus.

A few correlations have been worked for cancer, but no attempt has been made to deal with this aspect of the question on the scale of the Medical Research Council Special Report No. 99, dealing with occupational cancer in 1910–12. Indeed, this could not be done without more tabulation than has been undertaken. The only sites for which occupational correlations can be worked, as matters now stand, are those distinguished in the abstracts—the skin, lip, tongue, œsophagus and stomach. The work of the authors of the report referred to was based on special tabulation additional to that undertaken for the Registrar-General’s Report on Occupational Mortality in 1910–12, and while the present report embodies some of this additional material, it has not been attempted to go so far in elaboration of the cancer tabulation in a report on occupational mortality from all causes as the stage reached in the Medical Research Council Special Report on cancer only.

Correlation of total cancer mortality (cancer all sites C.M.F.) with that for diabetes (diabetes C.M.F., Table C) (164 occupations) gives the result :—

$$r = - \cdot 010 \pm \cdot 052$$

which is plainly without significance, and shows that English occupational experience lends no support to the association between the two mortalities found by G. D. Maynard (*A Statistical Study in Cancer Death-rates*, *Biometrika*, Vol. VII) to hold good for the cities and States of the U.S.A. in 1900, but which he found not to apply to American occupational data.

The influence of alcohol as a cause of alimentary tract and other cancer has been tested by working the correlation between the C.M.F. for cirrhosis of the liver and for cancer of various sites. The results correspond closely with those given for 1910–12 in the M.R.C. Special Report No. 99 :—

Cirrhosis of the liver and cancer of the tongue	..	$r = + \cdot 278 \pm \cdot 049$
“ “ “ “ “ œsophagus	..	$r = + \cdot 358 \pm \cdot 046$
“ “ “ “ “ stomach	..	$r = - \cdot 011 \pm \cdot 053$
“ “ “ “ “ all sites	..	$r = + \cdot 296 \pm \cdot 048$

These results for 164 occupation groups compare with $+ 0 \cdot 224 \pm 0 \cdot 069$ for lingual, $+ 0 \cdot 327 \pm 0 \cdot 064$ for œsophageal, and $- 0 \cdot 010 \pm 0 \cdot 072$ for gastric cancer for 87 occupation groups in Young and Russell’s M.R.C. Report referred to. They therefore support the conclusion arrived at in that report that there is a definite tendency for “the mortality from cancer of the tongue and cancer of the œsophagus to be

directly associated with the incidence of chronic alcoholism." But there is no evidence of association between alcoholism and cancer of the stomach.

As gastric ulcer is held by many surgeons to be the cause of a large proportion of cases of cancer of the stomach, the correlation between occupational mortality from the latter and from peptic ulcer has been determined, the reason for using peptic rather than gastric ulcer being merely that the C.M.F.s were available for peptic ulcer, and would have had to be determined (from less adequate material) for gastric ulcer. As almost two-thirds of the peptic ulcer deaths at 20-65 were of the gastric variety (page 2) the occupational distribution of peptic ulcer mortality is mainly governed by that of gastric ulcer. It has no significant correlation with that from gastric cancer, the result obtained being, for all 164 occupations:—

$$\text{Peptic ulcer and cancer of the stomach } r = - \cdot 115 \pm 0 \cdot 052$$

or, excluding barristers on account of the great influence of a single death (from duodenal ulcer) on their peptic ulcer C.M.F. (*see* page xci):—

$$r = + \cdot 091 \pm \cdot 052.$$

This result does not disprove all causal association between the two diseases in individuals, but it affords no support to it, and will probably be regarded as definitely antagonistic to any suggestion that most gastric cancers arise from ulcers. If this were the case occupations of high gastric ulcer mortality could hardly fail to display some significant excess for gastric cancer, and *vice versa*, but of this the coefficients quoted show no evidence.

The association of syphilitic infection with cancer of all sites, of the tongue, and of the œsophagus has been tested in the same way by calculating the correlation between the C.M.F. for the syphilis group of diseases and for cancer of each of these sites for the same 164 occupation groups. The results are as follows:—

Syphilis group and cancer of all sites	..	..	$r = + \cdot 384 \pm \cdot 045$
„ „ „ tongue	..	..	$r = + \cdot 359 \pm \cdot 046$
„ „ „ œsophagus	..	..	$r = + \cdot 480 \pm \cdot 041$

Corresponding results given by Young and Russell for 87 occupations were: tongue $+ \cdot 467 \pm \cdot 057$, and œsophagus $+ \cdot 369 \pm \cdot 062$. Thus the present returns show less association than those of 1910-12 between syphilis and cancer of the tongue, but a greater—in fact, a surprisingly great—association between syphilis and cancer of the œsophagus, and, in addition, a very considerable association between syphilis and total cancer mortality. In commenting on the smaller coefficient obtained by them for syphilis and œsophageal cancer, the authors of the M.R.C. Report say that “though it is customary to apply the Wasserman test in clinical cases of stricture of the œsophagus, the occurrence of a syphilitic affection of this region has been rarely described.” They consider that the apparent association of œsophageal cancer and the amount of syphilis is not real but is determined to some extent by its relationship with lingual cancer. This relationship amounted for the 87 occupations used for 1910-12 to

$$r = + \cdot 603 \pm \cdot 046$$

whereas the 164 occupations now dealt with yield

$$r = + \cdot 423 \pm \cdot 043$$

which, though still definitely significant, is much less so than the earlier result.

In view of this association Young and Russell calculated the partial correlation coefficient between mortality from cancer of the œsophagus and from syphilis, keeping that from cancer of the tongue constant, obtaining the value $+ 0 \cdot 116 \pm 0 \cdot 071$, from which they drew the deduction that “while the excessive incidence of lingual cancer in certain occupations has a definite relation to syphilis, the corresponding excess in the amount of œsophageal cancer is dependent on some other common cause which acts injuriously on the two regions,” or, in fact, in the words quoted above, that the association with syphilis is not real. In view of the smaller association between lingual and œsophageal cancer now obtained, and the larger association between œsophageal and syphilis, Young and Russell’s procedure of calculating the partial coefficient between mortality from cancer of the œsophagus and from syphilis, keeping that from cancer of the tongue constant, has been repeated, with the result (164 occupations) $r = + \cdot 387 \pm \cdot 045$, which seems to point strongly to the probability of some real association between cancer of the œsophagus and syphilis, even though this has not been recognised clinically.

As the total correlation coefficients obtained by Young and Russell seemed to suggest that mortality both from cirrhosis of the liver and from syphilis was positively correlated with that from cancer of the œsophagus, and as they had found a positive correlation between the occupational mortalities from these two causes, the partial correlation coefficient between mortality from cancer of the œsophagus and from syphilis was calculated by them with that from cirrhosis kept constant, with the result $+ \cdot 279 \pm \cdot 067$, which was held to show that alcohol could not explain the association between mortality from syphilis and from œsophageal cancer. As the value of r between syphilis and cirrhosis mortality, found by Young and Russell to be $+ \cdot 306 \pm \cdot 066$, is increased for the present data to $+ \cdot 401 \pm \cdot 044$ (page xx), the partial correlation between œsophageal cancer and syphilis, with cirrhosis constant, has been worked again for the 164 occupation groups of this report, with the result $r = + \cdot 393 \pm \cdot 044$, so the total correlation coefficient of $+ \cdot 480 \pm \cdot 041$ now found for mortality from œsophageal cancer and from syphilis is certainly not to be explained merely as a result of the association of both with alcoholism. Cancer of the tongue appears to be independently associated to some extent both with syphilis and with alcoholism, as its partial correlation coefficient with syphilis, liver cirrhosis mortality being kept constant, is $+ \cdot 282 \pm \cdot 048$, and with cirrhosis, syphilitic mortality being kept constant, $+ \cdot 156 \pm \cdot 051$, for 164 occupations in each case.

The occupations yielding lowest and highest C.M.F.s for cancer of all sites are stated below. The complete record is contained in Table F, the entries in which provide the means of writing the whole of the 178 occupations dealt with in order of cancer mortality. At the top of such a list would stand the following occupations of low mortality, with cancer C.M.F.s as stated in each case, and comparing with the average of 128·4 for the total occupied and retired in the ratios shown, and at its bottom the following occupations of high mortality :—

Occupations in Order of Cancer Mortality (all sites).

LOWEST MORTALITY.				HIGHEST MORTALITY.			
Occupation Group.		C.M.F.	Ratio (Table D).	Occupation Group.		C.M.F.	Ratio (Table D).
136	Ministers (not Anglican)	63·3	493	20	China, etc., kiln and		
134	Anglican clergy... ..	67·7	527		oven men	200·8	1,564
128	Bank officials	79·2	580	27a	Puddlers	205·0	1,597
85	Machine compositors ...	82·2	640	104	Gas stokers	205·2	1,598
49	Leather goods makers...	82·7	644	68	Hat formers, etc. ...	207·9	1,619
14	Stone miners and quar-			56	Cotton spinners and		
	riers	82·7	644		piecers	211·6	1,648
108	Railway signalmen ...	84·4	657	153	Barmen	229·9	1,790
86	Photographers	87·9	685	75	Cellarmen	231·3	1,801
72	Grain millers	88·3	688	13a	Tin and copper miners		
3	Farm bailiffs	89·7	699		(underground) ...	242·0	1,885
				40a	Cutlery grinders ...	248·8	1,938
				154	Waiters	257·2	2,003

The position of the clergy of all Protestant denominations at the head of this list is so remarkable, in view of the extent of their advantage over any other occupation, and of the fact that cancer mortality is light also for the Roman Catholic clergy (ratio 724), that it seems scarcely possible to attribute it merely to chance. In the past also their cancer record has been good, though not so pre-eminently so, but it must be remembered that improvement of diagnosis is presumably affecting the clergy less than most other occupations, so that in the past others may have returned lower cancer mortalities from understatement of the facts (*see* page xxv) whose death-rate is now seen, with more accurate certification, to be higher. The exceptionally low mortality of the clergy from syphilitic diseases (page xci) may be of some significance in this connexion, in view of the correlation value of $+ \cdot 384 \pm \cdot 045$ between mortality from these diseases and from total cancer (page xxvi).

Some interest attaches to the location of the growths accounting for the excessive mortality of the occupations returning the highest rates, in view of the restriction of social variation to certain sites. The C.M.F.s for cancer of certain groups of sites have therefore been ascertained for the ten occupations of highest mortality

conjointly, and for the four largest amongst them—waiters, barmen, cotton spinners and gas stokers—individually. The ratios of these per thousand of the corresponding rates for the occupied and retired as a whole are as follows :—

TABLE 5.

Sites accounting for Cancer Mortality Excess—C.M.F.s for Cancer of certain Sites in Occupations of high Cancer Mortality compared with those for all Occupied and Retired Civilian Males taken as 1,000.

	Upper alimentary canal.	Skin.	Larynx.	Intestine and Rectum.	Deep- seated Sites.	Miscel- laneous.	All sites.
Ten occupations of highest mortality...	1,681	7,067	1,717	1,419	1,415	1,729	1,724
Waiters	2,579	—	3,435	756	1,738	2,206	2,003
Barmen	2,695	—	1,870	1,031	1,329	944	1,790
Cotton spinners ...	1,206	16,200	1,174	1,388	1,494	1,350	1,648
Gas stokers	1,340	7,000	1,478	1,624	1,244	1,822	1,598

The site grouping is that of Table 4. As there was only one death from cancer of the breast (of a cellarman aged 55–65), this has been included with the miscellaneous sites in order to bring out the facts for skin cancer. It will be seen that this varies much more than that of any of the other sites, the cotton spinners' excess of over sixteen times the average being unapproached elsewhere. In their case, 22·9 per cent. of the total cancer C.M.F. is contributed by the skin, as compared with 3·4 per cent. for the occupied and retired, and for gas stokers the corresponding ratio is 11·1 per cent.

The ten occupations as a whole return slightly less excess of mortality from disease of the upper alimentary canal than from cancer in general, which may seem surprising in view of the distinctive social variability of this group of cancers. And indeed similar absence of distinctive variation applies also to the recorded growth of mortality from cancer of these sites during the period, 1901–1925, for which there are means of making the comparison. Mortality from disease of the upper alimentary tract has grown at just about the same rate as that from cancer in general.

But the occupational distribution of this mortality seems very significant. Of the ten occupations dealt with in Table 5 only three, barmen cellarman and waiters, are of a nature to suggest the likelihood of distinctive food or drink conditions. Two of these are amongst the four largest occupations individually dealt with in Table 5. In both cases, waiters and barmen, the rate for the sites in question is much higher than the average for the ten occupations, and about double those for the other two occupations distinguished, cotton spinners and gas stokers, whose high cancer rate is largely derived from cutaneous growths. In this way, therefore, Table 5 confirms the suggestion of Table 4 that cancer of the upper alimentary tract is largely influenced by food and drink. It also confirms the suggestion of that table that this influence ends at the pylorus, for the intestinal mortality of barmen is only about average, and that of waiters 25 per cent. less than average.

Information as to the particular sites to which this excess for waiters and barmen is due is to be found in Appendix D. From this it appears that the tongue cancer rate for barmen, five and a half times average, is the highest for any occupation. That for waiters is exceeded by 23 others. The œsophageal cancer rates for both barmen and waiters are exceeded only by that for cellarman, a kindred occupation, and their rates for cancer of the stomach only by those for metal polishers and rag grinders. Table 4 shows that these three sites, tongue, œsophagus and stomach, jointly account for over 82 per cent. of upper alimentary tract cancer mortality, and the smaller rates for the less important sites cannot profitably be studied for single occupations on a basis of three years' deaths. Appendix D, then, containing full occupational detail for all the important upper alimentary canal sites, confirms in a very striking way the special association of this group of cancers with dietetic conditions.

But by far the most definitely occupational cancer deaths remain those due to cutaneous growths, and these are distinguished in the abstracts for each of the 178 occupation groups.

The following is a list of occupations with highest ratios of "actual" to "expected" deaths (calculated at the rates for all occupied and retired civilian males) from skin cancer, the death-rates at ages, the numbers of recorded deaths from skin cancer, and the percentages of recorded to calculated deaths from skin cancer, and of deaths from skin to deaths from total cancer, being as stated in each case :—

Occupation Group No.		Deaths from Cancer of the Skin.			Mortality from Cancer of Skin per 100,000 at Ages							
		Number.	Percentages.		16-	20-	25-	35-	45-	55-	65-	70 and up.
			Recorded of calculated.	Skin of Total Cancer.								
—	*Patent fuel workers ...	2	1,429	100	—	—	—	—	—	606	—	—
56	Cotton spinners... ..	53	1,205	23	—	—	—	17	66	188	210	509
157	Chimney sweeps	21	1,167	27	—	—	—	65	45	117	222	815
104	Gas stokers	12	750	11	—	—	—	19	10	90	251	526
85	Machine compositors ...	3	750	18	—	—	—	21	25	—	—	2564
53	Cotton carders	3	500	11	—	—	—	32	—	80	—	327
27a	Puddlers	7	467	11	—	—	—	—	—	70	181	292
17	Brick, etc., makers	7	389	12	—	—	—	—	22	—	119	371
68	Hat formers, etc.	4	364	8	—	—	—	—	31	45	—	309
—	*Coke oven workers	4	333	13	—	—	—	—	17	41	—	357
23	Skilled glasshouse workers	4	308	8	—	—	—	—	—	36	154	284
117	Bargemen	16	286	8	—	—	—	—	7	58	56	190
119	Coal-boat loaders, etc. ...	4	286	7	—	—	—	—	31	28	—	175
58	Cotton doublers, etc. ...	4	250	6	—	—	—	—	15	50	93	—
109	Railway shunters	5	217	6	—	—	—	5	—	23	67	190
164	General labourers	261	183	5	—	—	0	3	9	18	42	132
28	Metal moulders	15	174	4	—	—	—	—	9	35	61	62
25	Chemical workers	7	159	5	—	—	—	4	15	27	—	—
—	All occupied and retired civilian males	2,117	100	3	—	0	0	1	4	12	25	73

* The deaths in these occupations were tabulated by age and cause, but the numbers were too small to warrant publication.

In several of these cases the occupational cancer risk has for some time been well known ; in others it can, if not already recognised, at least be readily understood ; but there are yet others for which the nature of the risk is not apparent on the surface, and which may therefore call for expert investigation. The first of these three groups includes at least the three occupations of highest recorded mortality—patent fuel workers, cotton spinners, and chimney sweeps. The second includes gas stokers (tar and heat risk), puddlers (heat), coke oven workers (tar and heat), and glasshouse workers (heat). The high rates for some cotton workers other than the spinners, whose liability to scrotal cancer from exposure to mineral lubricating oil has attracted so much attention of late, are believed to be largely due to the same exposure in the course of former work as spinners. The bargeman's risk may be tar, as suggested for seamen in the M.R.C. Special Report No. 99, and chemical workers must be liable to many forms of prolonged irritation. Although complete information as to seamen is not available (*see* page 126), the proportion of their total cancer mortality registered in England and Wales which was due to cancer of the skin can be stated at 5·1 per cent., a proportion in only moderate excess of the general average of 3·4. It is a somewhat curious fact that nearly all the occupations noted as of excessive skin cancer mortality record a cancer mortality for sites other than the skin also in excess of average. The only exceptions are patent fuel workers, and three for which the explanation of the skin excess is obscure, and in which it may therefore be due merely to chance,—machine compositors, brickmakers, and shunters.

In view of the importance of cancer of the skin as a preventable disease (*e.g.*, mule spinners), examination has been made of the records for the other occupations not dealt with on pages 5–95 for the purpose of bringing to light any instances of excessive mortality which might exist. Fortunately no new facts of convincing significance have emerged, but as a rule three years' deaths provide too small a basis of fact to

decide for or against the significance of such excesses as do come to light. It seems best, therefore, to put all on record which are suggestive of even possible significance, so that repetition of the tabulation on another occasion may determine whether the excess in each case is maintained or not. It will be seen that none of the figures obtained reveal any great cause for alarm, and they are put on record merely with a view to making provision for future watchfulness, and to demonstrate that no other case similar to that of mule spinners is lying concealed amongst the occupations for which causes of death are not tabulated. The records for all occupations as classified in Table A were examined, and where more than one death from skin cancer was recorded the crude mortality rate was ascertained. For all occupied and retired males this was found to be 6 per 100,000, and in the case of every occupation for which it exceeded 8 the "expected" deaths were calculated at the age rates applying to the occupied and retired generally. The results are as follows for all occupations fulfilling the conditions (more than one death from skin cancer, and a crude mortality exceeding 8 per 100,000) :—

Occupation Code No.		Deaths.		
		"Actual."	"Expected."	Ratio.*
000	Fishermen	26	6.4	406
028	Estate labourers	4	1.7	235
040	Coal mine owners, agents, managers	3	1.8	167
101	Foremen, bricks and pottery	2	0.4	500
139	Unskilled glass-workers	2	0.3	667
339	„ tannery, etc., workers	2	0.8	250
340	Employers, etc., leather goods	3	0.9	333
350	„ textiles	6	5.8	103
399, part	Unskilled workers in cotton	7	2.4	292
400	Employers, etc., dress	10	8.4	119
411	Glove makers	2	0.2	1,000
430	Employers, etc., foods	6	5.0	120
431	Foremen, foods	3	0.9	333
459, part	Unskilled brewery workers	4	2.6	154
470	Employers, etc., wood working... ..	10	5.5	182
498	Other skilled workers in wood	3	1.9	158
500	Employers, etc., upholstering	2	0.3	667
549	Unskilled workers in printing	2	0.6	333
648	Other skilled makers of musical instruments	2	1.1	182
692, part	Inspectors, etc., gasworks	2	1.0	200
699, part	Unskilled workers, gasworks	4	2.8	143
779	Advertising agents	2	0.8	250
797	Pawnbrokers, etc.	2	1.2	167
808	Police inspectors, etc.	2	1.9	105
828	Church, etc., officials	2	2.6	77
845	Mental attendants	3	1.0	300
849	Subordinate medical service	3	1.4	214
899	Miscellaneous entertainers	4	1.9	211
921	Caretakers	8	10.0	80
963	Watchmen	10	12.5	80
965	Street musicians and artists	2	0.3	667

* Deaths registered per cent. of those "expected" (calculated at the age rates for the occupied and retired as a whole).

In a few cases like that of caretakers no excess is shown after allowance has been made for the advanced stage of the lives at risk, but it has been thought best to include all cases fulfilling the conditions described. No doubt other occupations of higher corrected mortality than some of these are undealt with, but the list as it is suffices to show that a standard of 33 per cent. excess for the crude rate implies some degree of excess in nearly all cases after correction for age, so that similar moderate increase of mortality on correction for youthfulness would reveal no instances of really high standardized mortality not included in the table.

The ratio of 406 per cent. for fishermen has been ascertained from the deaths of fishermen registered in England and Wales, and a population representative of

English and Welsh fishermen. This consists of 30,004 fishermen returned as such in the 1921 census, together with 2,366 men returned by the Registrar-General of Shipping and Seamen as fishermen born in England and Wales, and absent from the country on board fishing vessels on census date. This population differs from that employed for seamen in Appendix B in applying only to England and Wales. The reason for this is that the only count of skin cancer deaths available was for those registered in England and Wales. This may be accepted as reasonably complete (page 127), as a fisherman approaching death from cancer of the skin is unlikely to go to sea at such a stage of the disease that his death could occur during the course of the relatively short fishing cruise. A total (all causes) mortality figure for fishermen arrived at in this way would be under-stated by exclusion of deaths occurring at sea, but it is believed that the rate for cancer of the skin must be practically correct. In order to provide comparison with merchant seamen, whose total cancer C.M.F. is stated at 146·7 on page 128, and whose proportion of skin to total cancer mortality, 5·1 per cent. (page xxix), may be compared with similar proportions for other occupations on that page, the population of English and Welsh seamen has been obtained in the same way as that of fishermen, and compared with the deaths registered as due to cancer of the skin. Of these there were 41, while the number to be expected at the rates for all occupied and retired males is 21·8, so an excess of 88 per cent. for seamen compares with that of 306 per cent. for fishermen (and 286 per cent. for bargemen).

Although locomotive engine drivers and firemen have been said to be specially liable to skin cancer from firebox heat, the records for 1921–23 contain little evidence of this. The total number of deaths from skin cancer was 12, as against 11·1 which would have occurred at the average rates for all occupied and retired.

Diabetes.—The social distribution of mortality from this cause is almost precisely the reverse of that from phthisis and cancer. It affects chiefly the classes provided with the financial means of over-eating and under-exercising. Even the excess for Class II over Class I can be fitted into this picture if we assume that both possess the means in question, but that its abuse tends to be more restrained by prudential considerations in Class I than in Class II. This assumption, however, is not altogether in harmony with Diag. 3, which shows that the excess for Class II is limited to 20·5, the ages on which the C.M.F. is calculated, and that the very important mortality (almost 40 per cent. of the whole) at 65 and over is higher for Class I than for Class II. Table 3 shows that the chance of ultimate death from diabetes is much the same for these two classes, and is only about one-third as great for Class V. A good illustration of the influence of financial circumstances in this matter is provided by the contrast between the farmer and the agricultural labourer. The environment of both is very similar, but the farmer probably gets a good deal more to eat, and the diabetes C.M.F. of farmers is 16·0, while that of their labourers is 7·3 (Table C).

It is only when the class variation of diabetes mortality is analysed by age, as in Diag. 3, that its full extent and significance can be realised. This diagram shows that at ages under 45 there is no very definite or consistent class variation of mortality, but that after this age the rates for Classes I and II are in great excess. At 55–65 mortality increases with social status from 45 per cent. of average for Class V to 170 per cent. for Class II, which, as at all ages 20–65, returns a higher rate than Class I. After 65 this last exception to the rule of increase of mortality with increase of status disappears, and at 65–70 the rate mounts regularly from 265 per million for Class V to 1,530 for Class I, almost six times as much. At 70– the variation is similar, but its range a little less, from 457 to 2,039. There can be little doubt as to the interpretation of these remarkable figures. It has long been believed that diabetes in later life is largely a disease of over-nutrition, and definite statistical evidence of this is provided by Table XLI and Diag. 1 of the Statistical Review (Text) for 1925. These show that it is this late mortality which fell in this country when food supplies were restricted during the war, and has risen most since they have been restored. It is only to be expected, therefore, that late mortality should be correlated with prosperity, but the extent of the correlation will probably prove surprising to most readers.

On the other hand, Diag. 3 shows no evidence of any relationship between the diabetes of youth and middle life and over-nutrition. Indeed, it may almost be said that early and late diabetes are statistically two different diseases—a conception not altogether lacking in clinical support. It may well be that at the earlier ages defect,

sometimes hereditary, of the cells of the pancreas now known to be concerned, is the great cause of diabetes, and in later life the breaking down under overload of originally normal machinery for the utilisation of carbohydrate food.

It may be remarked that a similar diagram for females would probably show far more extreme social grading still, for the diagram in the 1925 Statistical Review referred to shows that the mortality of elderly females has been far more sensitive to changes in the food supply than that of males, and similar experience has been met with also in other countries. Diabetes, indeed, has been more fatal to females than to males in this country from 1923 onwards, the standardized rates for males always having been the higher before. In this matter we appear to be following in the footsteps of the United States, where the mortality, much higher than ours, has long been greater for females, and where apparently the causes of elderly diabetes (which is responsible for most of the deaths, 80 per cent. or more of our recorded mortality for each sex at present occurring at ages over 45) are more prevalent than in England. There, as here, late mortality, especially of females, is increasing rapidly, notwithstanding the introduction of insulin, which in England, at least, has been very effective in reducing the mortality of early and middle life.

Table F shows that the following seven occupation groups recorded no deaths from diabetes: slate quarriers, slate masons, coppersmiths, cellarmen, rubber workers, barristers, and chimney sweeps. Six of these groups are small, ranging from slate masons, 2,539 men, to slate quarriers, 6,645, but the seventh, rubber workers, numbered 16,350. The low rate for bank officials, only 36·1 per cent. of average, is remarkable in view of the Class I excess of 24·6 per cent., which is shared in greater or less degree by the great majority of Class I occupations, the only other exceptions being authors, journalists, etc. (72·1 per cent.), Anglican clergy (77·9), and solicitors (94·3).

Another remarkably low mortality, in view of the extent of data on which it is based, is that of coal hewers (C.M.F. 5·6, or 45·9 per cent. of average). At the other extreme come glass blowers (379·5 per cent. of average mortality), skilled glasshouse workers in general (359·0), tin and copper miners (354·1), wool sorters (347·5), cotton blowroom operatives (323·8), publicans (285·2), other skilled glass workers—*i.e.*, not in glasshouse—(257·4), wool weavers (256·6), dentists (239·3), textile warehousemen (232·8) and tobacco factory operatives (226·2 per cent.). It is at least a remarkable coincidence that the three glass-working occupations distinguished should all figure in this list, even though the glass blowers are included amongst the glasshouse workers, for, as pointed out on page lxx, deduction of the blowers from the glassworkers' total shows that diabetes mortality is almost as high (310·7 per cent. of average) for other glasshouse workers as for blowers. So we have three separate groups of glass workers, the only three for which the facts have been tabulated—glass blowers, other skilled glasshouse workers, and other glass workers (*i.e.*, not in the glasshouse)—all figuring in this list. There are, indeed, only four other occupations—wool sorters, tin and copper miners, cotton blowroom workers, and publicans—whose diabetes mortality exceeds that of any one of the three groups of glass-workers. Notwithstanding the small numbers of deaths involved, this seems a very significant fact. Indeed, the very smallness of the numbers on which most of the occupational diabetes rates are based might have been expected to lead to a number of excesses over at least some of the glass-workers' mortalities as the result of mere chance, had these mortalities not all stood out as exceptionally high. In 1910–12 the C.M.F. for glass manufacture was 9, comparing with 10 for all occupied and retired males; in 1900–02 the glassworkers' excess was about 50 per cent., but in 1890–92, the earliest period with which comparison can be made, the excess was 200 per cent., which does not differ greatly from the present experience.

The age distribution of the glass-workers' deaths is peculiar, none of these deaths occurring at ages over 65, though 40 per cent. of the total deaths (of the occupied and retired) were at these ages, and 60 per cent. being at 55–65, when only 24 per cent. of the total deaths occurred. This in itself may be significant of some occupational influence.

Cerebral hæmorrhage resembles chronic nephritis in showing little variation with social status. Both are in some excess for Classes II and V only (Diag. 3). But the chance of death at working ages is considerably less for Class V than Class II from both causes, owing to greater mortality in Class V from other causes (Table 3). From this point of view the position of Classes I and II is much the same for both, their chance of death at working ages from both being higher than for any other class.

The occupation groups recording highest and lowest mortality from this cause, with the ratio of the C.M.F. in each case per 1,000 for all occupied and retired males, may be seen from Tables D and F to be as follows :—

Occupations in Order of Mortality from Cerebral Hæmorrhage.

LOWEST MORTALITY.				HIGHEST MORTALITY.			
Occupation Group.		C.M.F.	Ratio (Table D).	Occupation Group.		C.M.F.	Ratio (Table D).
16	Cement workers ...	11·8	263	51	Cotton blowroom operatives	97·8	2,178
114	Tram drivers ...	12·5	278	52	Rag grinders ...	97·8	2,178
85	Machine compositors ...	17·6	392	40a	Cutlery grinders ...	98·4	2,192
115	'Bus and tram conductors ...	18·9	421	74	Brewers... ..	100·8	2,245
140	Dentists ...	20·2	450	19	Pottery dippers, painters, etc.	104·1	2,318
3	Farm bailiffs ...	20·6	459	36	Coppersmiths ...	118·7	2,644
4	Woodmen ...	21·1	470	38	File cutters ...	120·0	2,673
151	Gamekeepers ...	21·7	483	13	Tin and copper miners ...	134·0	2,984
146	Artists ...	23·1	514	53	Cotton carders... ..	137·6	3,065
76	Tobacco factory operatives ...	23·7	528	13a	Tin and copper miners (under-ground) ...	171·0	3,808

Five of the ten occupations of lowest mortality—machine compositors, farm bailiffs, woodmen, gamekeepers, and tobacco workers—are also included amongst the ten of lowest mortality from chronic nephritis, and six—cotton blowroom workers, rag grinders, pottery dippers, coppersmiths, file cutters, and tin and copper miners below ground—are included amongst the ten of highest mortality from each cause. Association of chronic nephritis and cerebral hæmorrhage in the individual as cause and consequence is of course a familiar fact of clinical medicine, and it results in one of the highest correlations found for the occupational groups in this report, that between the C.M.Fs. for chronic nephritis and for cerebral hæmorrhage of the 164 occupations

$$r = + \cdot 658 \pm \cdot 030$$

Diseases of the circulatory system.—The mortality from these causes, taken as a whole, is very much the same in all classes, an excess of 20 per cent. for Class V being the only considerable departure from average. As it is also subject to comparatively little influence from occupational environment, its range of variation in Table D (from a minimum of 36·9 per cent. of average for gamekeepers to a maximum of 237·5 for tin and copper miners below ground) is less than for most causes of comparable magnitude. But though occupational risk is seldom expressed in circulatory form to any outstanding extent such mortality is a very definite feature of one very distinctive group of occupations, the textile trades. These include 16 of the numbered groups, and of these only one, hosiery frame tenters, does not return a circulatory C.M.F. in excess of average, the degree of excess ranging up to 91 per cent. for cotton carders. The hosiery workers' mortality is below average also from both valvular and other heart disease, but only one other textile occupation, rag grinders, returns a low mortality from valvular, and only one, wool carders, from other heart disease. But the textile position is still more remarkable in regard to chronic nephritis, from which not one of the sixteen occupations fails to return mortality in excess of average. With this nephritis excess, no doubt, is associated another distinctive mortality of textile workers—that from cerebral hæmorrhage. From this cause only two of the sixteen textile occupations, wool sorters and wool weavers, fail to exceed the average mortality. It thus appears that the conditions of work in textile mills promote degenerative changes of the kidneys, heart, and blood vessels. The latter statement applies not only to the cerebral vessels but to the arteries generally, excessive mortality from arterio-sclerosis being the rule, to which the chief exception is found in the hosiery workers, whose mortality has been seen to be below average also from both forms of heart disease distinguished. The association between disease of the kidneys, arteries, and heart muscle (the chief ingredient of "other" heart disease) is, of course, to be expected, but the meaning of their association with valvular disease is less obvious. This will be seen shortly to have a different social distribution from myocardial disease, and it may be that both its special incidence upon the poorer sections of the community and its special incidence on textile workers are largely due to attribution in their case of deaths to valvular, which in other cases would be attributed to myocardial disease. The view of the medical profession on the differential diagnosis of these conditions has changed to some extent of late years,

as evidenced by the fact that the proportion of deaths in England and Wales from valvular disease to the total from all forms of heart disease, after steady increase during 1911–1918 with increasing precision of certification from 36·4 to 46·1 per cent., has declined every year from 46·3 per cent. in 1920 to 37·4 in 1926 (*Statistical Review for 1924*, Text, page 76). It is only natural that such changes of medical opinion should affect certain sections of the community earlier than others. But if a tendency still exists, though in diminishing degree, to attribute to valvular lesions cases of disease for which the heart muscle is responsible, it is natural that excess of valvular as well as of myocardial mortality should be associated with that from diseases of the arteries and kidneys. The particular conditions in textile work responsible for these degenerative changes form a subject for consideration by those responsible for the health of the mill workers, but one possible hint embodied in the returns may be pointed out. Mortality from disease of the circulatory system is very high, 161·5 per cent. of average, for cotton weavers in the dry sheds dealt with on page 115, but is low, 72·6 per cent., for those working in wet sheds (page lxxvii).

Valvular heart disease.—The social grading of mortality from this cause is represented in Diag. 3. From a Class I minimum of 56·9 per cent. of average it rises regularly to a Class V maximum of 127·6 per cent., or more than double. As in many other cases, the death-rate differs little for the three intermediate classes, constituting the great bulk of the population, but is much lower for Class I and much higher for Class V than for any of the others. The same diagram shows that this grading is at its highest in youth and early manhood, but that in later life it largely disappears. As to its causation two possible factors suggest themselves, both of which may play a part. (1) The ground for believing that deaths may be attributed in Class V to valvular disease on evidence which would lead to a diagnosis of myocardial disease in Class I has been already referred to. But as the same type of social grading is very apparent at ages under 45 for myocardial (“other”) disease as well as for valvular (Table G), it is evident that in early and middle life at least heart disease as a whole is found to be specially fatal to the poorer classes. (2) Although no record has been obtained of the social incidence of mortality from acute rheumatism it is to be presumed that even if all classes were subject alike to this disease its effect upon the valves of the heart would be more serious in those least in a position to take the necessary precautions.

The highest and lowest occupational mortalities from valvular disease, with the C.M.F. ratios per 1,000 of that for occupied and retired civilians as a whole, are as follows:—

Occupations in Order of Mortality from Valvular Disease of Heart.

LOWEST MORTALITY.				HIGHEST MORTALITY.			
Occupation Group.		C.M.F.	Ratio (Table D).	Occupation Group.		C.M.F.	Ratio (Table D.)
129	Insurance officials	14·6	230	15	Slate miners and quarriers	104·4	1,647
151	Gamekeepers	15·8	249	61	Wool weavers	105·6	1,666
128	Bank officials	21·2	334	51	Cotton blowroom operatives... ..	107·0	1,688
134	Clergy (Anglican)	24·8	391	93	Slaters and tilers	109·5	1,727
72	Millers	24·9	393	40a	Cutlery grinders	109·5	1,727
139	Medical practitioners	27·8	438	38	File cutters	117·4	1,852
135	Roman Catholic Priests	29·9	472	95	Slate masons	126·4	1,994
108	Railway signalmen	29·9	472	153	Barmen... ..	128·3	2,024
39	Gasfitters	31·6	498	55	Cotton strippers and grinders	130·8	2,063
16	Cement workers	32·8	517	53	Cotton carders... ..	137·6	2,170

It will be noticed that four of the ten occupations of highest mortality are textile workers. Also it is at least a curious coincidence, though it is hard to conceive of it being more, that the only three slate working occupations dealt with should all find a place in the ten of highest mortality from valvular disease. But it should be pointed out that, as regards home conditions and medical certification, slate quarriers and workers may be regarded as forming a single occupational group, both for the most part living and working side by side in the same areas of North Wales, though under different occupational conditions imposed by work in the open air and in dusty sheds respectively (see page lxxxiii). It is natural therefore that the excess mortality from valvular disease of the one should apply also to the other occupation (though it will be noted that it is greater for that most exposed to slate dust) so reducing the coincidence, on the assumption of chance, from the

appearance of three to that of two slate working occupations amongst those of highest mortality from this cause. After this reduction chance appears the more probable explanation of a very curious coincidence, which is further complicated by the fact that all three slate occupations appear in the list on this page of those with highest and lowest mortality from other (*i.e.*, myocardial) heart disease. But in this case, while the rate for slate workers is again very high, those for slate quarriers and slaters and tilers are amongst the lowest experienced. This reduces any possibility of explaining the high mortality from valvular disease of the North Wales slate operatives as a result of local peculiarities of medical certification to the case of the slate quarriers alone, for the high rates for slate workers from both forms of heart disease can clearly not be explained by any confusion between them. The total heart disease C.M.F. of slate masons, 299·7, is exceeded only by that of underground tin and copper miners, 312·3. It may be noted that these and cutlery grinders (295·4), the three occupations of highest heart disease mortality, are all subject to excessive silica risk.

Other heart disease.—Substantially this is equivalent to myocardial disease. During 1921–23 the 17,878 deaths of males aged 20–65 from diseases of the heart other than valvular (page 2) were made up as follows:—

—	—	Deaths.	Per cent. of total.
87	Pericarditis	343	1·9
88	Acute endocarditis and myocarditis	2,434	13·6
89	Angina pectoris	1,457	8·2
90 (5–7)	Myocardial disease so returned	6,975	39·0
90 (8)	Disordered action of the heart	361	2·0
90 (9)	Heart disease (undefined)	6,308	35·3
		17,878	100·0

Of these groups, all but those numbered 87 and 88, or 84·5 per cent. of the total, may be taken as implying probable chronic myocardial disease; and as the myocardium is concerned also in the excepted conditions (87 and 88), “other” heart disease may be regarded as equivalent to myocardial disease, mainly of chronic degenerative type, and will be referred to accordingly as myocardial disease.

It has already been pointed out that of the sixteen textile occupations dealt with all but hosiery frame tenters and wool carders suffer a mortality from this cause above the average, and that all of them do so from chronic nephritis. The association for the 164 occupation groups between these two diseases (myocardial disease and chronic nephritis) is fairly high:—

$$r = + \cdot 473 \pm \cdot 041.$$

The occupations of highest and lowest mortality from this cause, with the C.M.F. ratio in each case from Table D, are as follows:—

Occupations in Order of Mortality from “other” Heart Disease (chiefly Myocardial).

LOWEST MORTALITY.				HIGHEST MORTALITY.			
Occupation Group.		C.M.F.	Ratio (Table D).	Occupation Group.		C.M.F.	Ratio (Table D).
36	Coppersmiths	18·5	282	53	Cotton carders	122·6	1,869
16	Cement workers	20·7	316	75	Cellarmen	133·1	2,029
77	Wood-working foremen	24·1	367	19	Pottery dippers, glazers, etc.	138·3	2,108
12	Iron miners below ground	26·7	407	20	China, etc., kiln and oven men	139·2	2,122
83	Paper mill workers	32·7	498	13	Tin and copper miners	147·1	2,242
3	Farm bailiffs	35·3	538	68	Hat formers, plankers, etc.	152·0	2,317
151	Gamekeepers	36·2	552	137	Barristers	164·9	2,514
93	Slaters and tilers	37·0	564	95	Slate masons	173·3	2,642
15	Slate miners and quarriers	39·5	602	40a	Cutlery grinders	185·9	2,834
90	Building foremen	39·7	605	13a	Tin and copper miners below ground	212·8	3,244

It has already been noted that slate masons are included amongst the ten occupations of highest mortality from both myocardial and valvular disease, and the same statement applies also to cutlery grinders, while the enormous excess of myocardial mortality for underground tin and copper miners is also accompanied by large excess (ratio 1,569) from valvular disease.

The association, suggested by the conjunction of these three occupations as those of highest mortality from myocardial disease, between heart disease and silica risk, cannot, unfortunately, be measured directly, as the deaths ascribed either to silicosis or to chronic interstitial pneumonia are far too few to make this possible (page xl). It is worth noting, however, that there is a significant correlation between mortality (164 occupations) from bronchitis and chronic nephritis— $r = +.380 \pm .045$. Chronic nephritis has been seen to be associated with heart disease, and bronchitis certainly often results from silicosis. If the latter is a cause of chronic nephritis it may conceivably be a cause also of similar degenerative changes in the heart muscle. But association of these degenerative diseases may of course be independent of silicosis. Little more than vague speculation is possible without some more effective appraisal of the incidence of silicosis on occupations than is at present supplied by the mortality returns.

At ages under 45 mortality from myocardial disease is, as already stated, correlated with social status to a very considerable extent, though less than that of valvular disease, the death-rate at each of these four age groups being lowest for Class I and highest for Class V, but the very much heavier mortality in later life bears little relation to social status (Table G).

Arterio-sclerosis is the only other numerically important cause of death from circulatory disease. Of the total of 100,812 deaths from diseases of the circulatory system (including aneurysm) of occupied and retired males (page 2), 23,264 or 23 per cent., were due to arterio-sclerosis, and 74,140, or 74 per cent. to heart disease, the remaining 3 per cent. being chiefly from aneurysm. As few (under 24 per cent.) of these deaths occur between 20 and 65 no C.M.Fs. have been calculated for this cause, so no statement can be made as to its occupational distribution. Its social distribution, however, is shown in Table G, from which it will be seen that there is a general tendency to decline from Class I to Class IV, with a considerable rise from IV to V. This form of mortality is, as already noted, in large excess for textile workers. Taking these as a whole their death-rate exceeds that of the occupied and retired at each age over 45 by the following percentages—45–, 21 per cent.; 55–, 44 per cent.; 65–, 42 per cent., and 70–, 50 per cent. If hosiery workers, whose working conditions differ a good deal from those of other textile operatives, and who have been seen to escape the excess of mortality from heart disease, valvular and “other,” as well as from arterio-sclerosis, common to nearly all other textile workers, are excluded, the textile excesses at the same four ages are increased to 26, 47, 47 and 56 per cent. respectively. As against these excesses the fact that the 249 deaths amongst all occupied and retired males at ages under 45 are unrepresented amongst textile workers is of little moment. Although the age group rates have not been summed up in a textile workers’ C.M.F. for the reason stated, their general effect, at ages over 35, when alone such deaths are to be expected, may be shown by the ratio of actual to expected deaths—149 per cent. The corresponding ratio for heart disease at the same ages is 127 per cent., hosiery workers being omitted in both cases. So the textile workers’ excess of mortality from arterial disease is even greater than from heart disease at the period of life at which such degenerative changes occur.

Other circulatory disease in Diag. 3 implies other than heart disease, which precedes it. It thus includes arterio-sclerosis, and the “other circulatory disease” of the abstracts, there shown separately. Its large excess for Class I (54 per cent.) is accounted for mainly by arterio-sclerosis, which may be seen from Table G to be in equal or greater excess for Class I at 45–55 and 55–65, the only ages in this case seriously affecting the C.M.F., as the rates at earlier ages are inconsiderable and those at later ages are excluded from the calculation. The Class I excess applies to the miscellaneous circulatory diseases as well as to arterio-sclerosis, at all ages over 45, which alone are of importance in either case.

Respiratory disease.—This form of mortality is more closely associated with social status than any other, whether respiratory tuberculosis, with a similar social distribution to other respiratory disease, be included or not. For the non-tuberculous forms of respiratory disease the C.M.F. increases from 96.2 for Class I to 236.5 for Class V. For bronchitis, for pneumonia, and for other respiratory diseases (as a whole) alike, this increase is uninterrupted (Diag. 3 and Table D). It is at its maximum in the case of bronchitis, which has been already considered in connexion with Diag. 2. Here the Class V mortality is about seven times that of Class I, while for pneumonia and for other respiratory diseases as a whole it is less than double. For respiratory disease as a whole the Class V rate is, as already noted, two and a half times that of Class I.

The fact that social grading is much less, on the whole, especially at the higher ages, for pneumonia than for bronchitis (Diag. 3) suggests that the bronchitis social differences

may be due in some degree to deaths being ascribed to bronchitis in Class V which in Class I would be ascribed to pneumonia. This possibility is examined by comparing the proportion of pneumonia to bronchitis deaths in the five classes in the following table :—

TABLE 6.

Ratio of Mortality (C.M.F. at 20–65 and number of deaths at each age) from Pneumonia to that from Bronchitis, taken as 100 in each case, by Social Class and Age.

Age.	Social Class.					
	All Classes.	I.	II.	III.	IV.	V.
20–65	172	555	263	164	153	146
20–	913	—	931	959	744	1,075
25–	685	1,850	859	751	552	612
35–	362	1,363	547	391	304	272
45–	183	561	285	183	166	141
55–	89	309	140	81	77	80
65–	54	172	88	49	48	48
70–	27	73	36	23	21	26

The comparison made is that of deaths tabulated at each age, but if this were done for all ages jointly the decreasing importance of pneumonia as age advances would affect the result, increasing the proportion of pneumonia deaths in the lower social grades, where the younger lives are relatively more numerous (Table 1). For this reason comparison for joint ages is made by means of the C.M.F.s instead of by the total deaths. The table shows that either pneumonia is very much rarer in proportion to bronchitis in the lower social grades, or that conditions returned for Class I as pneumonia are returned for Class V as bronchitis. Very probably both possibilities contribute to the result shown in the table. The ratio (pneumonia per cent. of bronchitis) falls for the C.M.F.s from 555 for Class I to 146 for Class V, the fall being uninterrupted, though the differences become much less towards the lower end of the social scale. Movement is irregular for the ratios based on the small numbers of deaths at 20–25, but at each age thereafter there are large social differences of the same nature as for the C.M.F.s. At 35–45 and 45–55 the ratio falls without interruption from a Class I maximum to a Class V minimum, while at the other four ages dealt with also large falls occur, though not wholly without interruption. But for all classes alike the ratio falls as age increases, without any interruption whatever. Bronchitis (as returned) is thus the disease of old age and of the lower social grades, and pneumonia of youth and of the upper social ranks.

The question often arises whether it is not safer to make comparisons for total respiratory disease (composed for all occupied and retired civilian males of pneumonia 40 per cent., bronchitis 51 per cent., and other diseases 9 per cent.) than for either bronchitis or pneumonia separately. The occupation groups are therefore compared in Tables C D and F for total respiratory disease as well as for bronchitis and pneumonia separately. Those of lowest and highest mortality from the combined diseases are as follows :—

Occupations in Order of Mortality from Respiratory Disease.

LOWEST MORTALITY.				HIGHEST MORTALITY.			
Occupation Group.		C.M.F.	Ratio (Table D).	Occupation Group.		C.M.F.	Ratio (Table D).
151	Gamekeepers	42·7	281	127	Costermongers	331·6	2,186
4	Woodmen	49·3	325	118	Stevedores	354·4	2,336
108	Signalmen	56·4	372	51	Cotton blowroom operatives	368·9	2,432
136	Nonconformist ministers ...	60·5	399	40	Metal grinders	372·8	2,457
3	Farm bailiffs	62·2	410	18	Potters	433·2	2,856
134	Anglican clergy	63·2	417	55	Cotton strippers and grinders	433·3	2,856
129	Insurance officials	66·3	437	20	China, etc., kiln and oven men	445·3	2,935
47	Watchmakers	67·6	446	13	Tin and copper miners ...	659·6	4,348
105	Railway officials	69·9	461	40A	Cutlery grinders	699·5	4,611
141	Teachers (not music) ...	71·0	468	13A	Tin and copper miners below ground	960·1	6,329

The occupations of lowest mortality include three of distinctively rural type (out of a rural total of six, numbers 1-5 and 151), three professional occupations (out of 16) and two railway occupations (out of six). Those of highest mortality include six (numbers 40, 18, 20, 13, 40A and 13A) of known silica risk, three (118, 51 and 55) exposed to other forms of dust, and only one (127) where the risk appears to arise from exposure to the weather rather than to dust in any form. Two of the three non-silica dust risks are in textile occupations, and both of these are cotton operatives. It is, indeed, remarkable how uniformly this form of mortality in the cotton industry exceeds the corresponding rate in the woollen. The C.M.F. ratios (Table D) in the two industries compare as follows for occupations otherwise identical:—

		Respiratory C.M.F. Ratio (Table D).	
		Cotton.	Wool.
53, 54	Carders	2,071	1,614
56, 57	Spinners	1,273	788
58, 59	Doublers	1,572	785
60, 61	Weavers	1,075	672

The spinning, doubling and weaving of cotton are carried on at high temperatures (70°—80°) in order to soften the waxy content of the fibre, and so render it more easily worked (Dearden, Milroy Lectures, 1927, B.M.J., 1927, Vol. I, 451), while carding room processes do not involve this requirement. The carders' mortality does not differ greatly in the two industries, being higher from bronchitis for wool and from pneumonia for cotton. Thus it appears that for three textile occupations involving for cotton (but not for wool) workers exposure to artificial heat and moisture, respiratory disease mortality is above average for the cotton workers so exposed and well below it for the woollen workers not subject to these conditions, whereas for carders, who are exposed to much dust but little heat, there is excess in both industries.

Bronchitis.—The regularity as well as the extent of the social grading of bronchitis mortality is very remarkable, though even in its case the usual tendency (page xiii) to approximation between the rates for Classes III and IV may be noted. But the excess of the Class V rate over that for Class IV is so great as much more than to compensate for this. It has the effect of approximating the five class rates in some degree to a geometrical progression, all intermediate rates lying below a straight line joining the positions on the chart for Class I and Class V.

Social gradation of bronchitis mortality is greatest at 35-45, when the Class V rate is over eight times that for Class I (Table G and Diag. 3), the Class V excess decreasing with further advance of age to three and a half times the Class I rate at 70-. The reduction is most noticeable for the last age group, 70-.

The occupation groups of lowest and highest bronchitis mortality are as follows:—

Occupations in Order of Mortality from Bronchitis.

LOWEST MORTALITY.			HIGHEST MORTALITY.		
Occupation Group.	C.M.F.	Ratio (Table D).	Occupation group.	C.M.F.	Ratio (Table D).
135 Roman Catholic Priests, etc.	—	—	51 Cotton blowroom operatives	149.8	3,020
137 Barristers	6.2	125	40 Metal grinders	156.5	3,155
134 Anglican clergy	6.8	137	23A Glass blowers and finishers...	159.6	3,218
136 Nonconformist ministers ...	7.5	151	38 File cutters	163.6	3,298
128 Bank officials	9.0	181	13 Tin and copper miners ...	192.8	3,887
143 Civil engineers	9.2	185	20 China, &c., kiln and ovenmen	242.8	4,895
4 Woodmen	9.8	198	13A Tin and copper miners be-		
129 Insurance officials	10.9	220	low ground	248.2	5,004
36 Coppersmiths	11.2	226	18 Potters, &c.	269.6	5,435
1 Farmers	11.4	230	55 Cotton strippers and grind-		
			ers	276.7	5,579
			40A Cutlery grinders	361.2	7,282

It will be seen that the list of light mortality occupations is headed by four professions, amongst them all three groups of clergy, and that the first ten include one more profession, two higher business groups, two rural occupations, and only one group of urban manual workers. The ten occupations of highest mortality, on the other hand, are all of manual type, and all urban except tin and copper miners, whose high bronchitis mortality is doubtless due to silica.

Two illustrate the high respiratory mortality of cotton workers, and though neither of these (blowroom operatives and strippers and grinders) is exactly represented in the woollen industry, the contrast already noted for total respiratory disease in occupations common to cotton and wool applies also to bronchitis, except in the case of carders, while even for these men a higher pneumonia mortality more than cancels the cotton bronchitis advantage. The bronchitis C.M.F. ratios for the four occupations common to the two industries compare as follows :—

—						Cotton.	Wool.
Carders	...	...	...	...	...	1,647	2,177
Spinners	...	...	...	...	...	1,431	514
Doublers	...	...	...	...	...	1,960	790
Weavers	...	...	...	...	...	1,651	845

Of the three occupations involving high working temperatures in the cotton industry the spinners suffer a bronchitis mortality nearly three times as high in cotton as in wool, doublers about two and a-half times, and weavers nearly twice as high.

The following correlation coefficients have been determined between the C.M.F.s of the 164 occupations for bronchitis and for certain other causes :—

Pneumonia	...	...	...	...	...	+	·534	±	·038
Phthisis	...	...	...	...	...	+	·528	±	·038
Chronic nephritis	...	...	...	...	...	+	·380	±	·045
Cerebral hæmorrhage	...	...	...	...	...	+	·411	±	·044
" Other " (myocardial) heart disease	...	...	...	...	...	+	·300	±	·053

The association with other forms of respiratory disease is of a high order, the same causes no doubt as promote bronchitis leading also to pneumonia and phthisis, *e.g.*, silica and other forms of dust. There is also a considerable association with the heart muscle, artery, kidney group of degenerations, discussed, with special reference to textile occupations, on page xxxiii.

Pneumonia.—Mortality from this cause is, as already noted, much less unequally distributed by social class than that from bronchitis, or respiratory disease as a whole (Diag. 3), yet increase is uninterrupted from a Class I minimum to a Class V maximum. But the differences between Classes I–III are small, the chief class distinctions being provided by progressive increases for IV and V. This feature of pneumonia distribution must be considered in the light of Table 6. Assuming the social distribution of total respiratory mortality to be correctly stated, the difference for pneumonia between Classes I and II would be much greater than it is if pneumonia bore the same relation to bronchitis in the two classes, and the differences between Classes III–V would be much less than they are if reduction of the pneumonia–bronchitis ratio were continued at the same rate between Classes III–V as between I–III. This suggests that the same type of death which is ascribed to pneumonia in one class (I) is ascribed to bronchitis in another (V), so that the social gradation for respiratory disease as a whole is increased by differential certification for bronchitis, and diminished in the same way for pneumonia, but less towards the Class V than the Class I end of the scale. It can hardly be doubted that this is the case, but to what extent the features of Table 6 are to be accounted for in this way, and to what (if any) by actual class difference in the pneumonia–bronchitis ratio, it is impossible to say. It seems significant, however, that on the assumption of class difference in certification, the features of Table 6 can so well account for the increase in class differences of pneumonia mortality from I–II to IV–V.

On this assumption Class II pneumonia mortality is cut down much more than that of I by ascription to bronchitis of the type of death for which certification varies (the Table 6 ratio being 555 per cent. for Class I and 263 for Class II). But the Class V pneumonia mortality is only a little more reduced in this way than that of Class IV, ratios being 153 for IV and 146 for V. Hence, even if the real class differences in pneumonia mortality were all equal, they would appear to be smaller, because more reduced by certification, towards the Class I end of the social scale.

The rule of increase in mortality from Class I to Class V applies without exception at ages under 35 and at 65–70, but at all ages over 20 large excess for Class V is the chief, and at 70– it is the only, evidence of the operation of this rule.

As alcoholism is believed to have a very definite effect in promoting mortality from pneumonia, the correlation ratio of the C.M.F.s for pneumonia and for cirrhosis of the liver has been determined for 163 occupations (omitting barristers, whose cirrhosis C.M.F. is based on a single death). It proves to be only $+ \cdot 134 \pm \cdot 052$.

The range of variation is much less for pneumonia than for bronchitis as between occupations, just as it is between social classes. The occupations of lowest and highest mortality, with their C.M.F.s, and the ratios of these per 1,000 for the general average, are as follows:—

Occupations in Order of Mortality from Pneumonia.

LOWEST MORTALITY.				HIGHEST MORTALITY.			
Occupation Group.		C.M.F.	Ratio (Table D).	Occupation Group.		C.M.F.	Ratio (Table D).
151	Gamekeepers	13·4	157	127	Costermongers	168·4	1,979
4	Woodmen	27·2	320	120	“ Other ” dock labourers ...	170·6	2,005
108	Railway signalmen ...	30·4	357	41	Metal polishers	172·4	2,026
136	Nonconformist ministers ...	35·8	421	27A	Puddlers	173·5	2,038
74	Brewers	37·9	445	53	Cotton carders	185·6	2,181
15	Slate miners	38·4	451	29	Iron foundry labourers ...	193·2	2,270
47	Watchmakers	39·0	458	51	Cotton blowroom operatives	193·9	2,278
61	Wool weavers	40·1	471	118	Stevedores	207·1	2,434
105	Railway officials	44·4	522	40A	Grinders of cutlery	207·6	2,439
2	Gardeners	44·9	528	30	Brass foundry labourers ...	212·1	2,492

The list of light mortality occupations is much less distinctive in type than that for bronchitis. It includes only one profession, as against five, and eight groups of manual workers as against two. But it includes three out of the six distinctively rural occupations dealt with, one of which, woodmen, holds a similar position in the bronchitis list. The ten occupations of highest mortality include three exposed to trying alternations of temperature, puddlers and iron and brass foundry labourers. Dust risk is much represented (dock labourers, stevedores, metal polishers, cutlery grinders, cotton carders, blow room workers), but not, it may be noted, by tin and copper miners, whose mortality from other forms of respiratory disease, including phthisis, is so excessive. They suffer very heavily from pneumonia of the chronic interstitial type (see below) but their C.M.F. for acute pneumonia is below average.

Chronic interstitial pneumonia is used as a generic title for such forms of disease as fibroid phthisis, fibrosis of lung, silicosis, miner's phthisis, etc., when returned as non-tuberculous. Under the international scheme of death classification these deaths from chronic inflammatory changes in the lungs caused by irritant dust are distinguished from those due to (acute) pneumonia. As this mortality is of great occupational importance it has been distinguished in the abstracts for each of the occupation groups dealt with, but the total number of deaths for the occupied and retired as a whole is only 498. Even these are for the most part widely scattered in very small numbers over the occupations dealt with, yielding as a rule quite insignificant death-rates. There is, however, a very definite concentration upon a few occupations, chiefly tin and copper miners, the C.M.F.s for which, together with those for the social classes, are as follows:—

—	—	C.M.F.	Ratio.	—	—	C.M.F.	Ratio.
—	Occupied and retired ...	1·34	1,000	14	Stone miners and quar-	11·58	8,642
—	Social Class I	1·05	784	—	riers		
—	“ ” II	0·96	716	14A	Do., igneous rock	—	—
—	“ ” III	1·73	1,291	14B	Do., limestone	4·07	3,037
—	“ ” IV	1·34	1,000	14C	Do., sandstone	37·24	27,791
—	“ ” V	1·19	888	94	Masons	29·18	21,776
7	Coal miners, hewers and	3·34	2,493	94A	Do., limestone	30·61	22,843
—	getters			94B	Do., sandstone	61·26	45,716
9	Do., making and repair-	5·87	4,381	18	Potters, etc.	17·20	12,836
—	ing roads			21	Brick, etc., kiln and	15·67	11,694
10	Do., others below ground	1·45	1,082	—	oven men		
11	Do., above ground ...	1·84	1,373	22	Other makers of bricks	4·33	3,231
12	Iron miners	17·97	13,410	—	and pottery		
13	Tin and copper miners ...	360·99	269,396	40	Metal grinders	33·51	25,007
13A	Do., below ground ...	546·31	407,694	40A	Cutlery grinders	66·20	49,403
—	—	—	—	146	Artists	20·13	15,022

The enormous preponderance of Cornish miners' mortality in this list may not altogether represent the facts, for it is very natural that in a case like this, where many instances of a disease rare elsewhere are met with in a limited area, it should there be more completely distinguished in certification from other similar forms of disease. Nearly all the mortality represented in the above list, it will be noticed, is associated in one way or another with stone, whether this is worked in mining for tin and copper, coal, iron ore, or in stone mining and quarrying or dressing. The potters' risk may be attributed to the flint dust used, and the metal grinders' to the dust from grindstones, but it is difficult to conceive of any special occupational risk accounting for the four deaths of artists. It will be noticed that the risk for coal miners is highest in the case of the makers and repairers of roads, who drive shafts and passages through the rock, giving access for the hewers to the working places where the coal itself is cut. The greater risk of sandstone as compared with igneous rock or limestone is referred to on pages lxvii and lxxxii.

Diseases of the Digestive System.—Diag. 3 shows that the main feature of the social distribution of deaths from these causes is considerable excess for Classes I and II, as has already been noted for diabetes. Presumably, as in the case of diabetes, over-indulgence in food (and in this case especially in drink, see cirrhosis of the liver, Diag. 3) by the classes in a position to commit this error leads to excess of mortality from breaking down of the overstrained machinery concerned. The diagram further shows that the ages at which this differential mortality chiefly manifests itself are 45–70, the time of life when, by common observation, the effects of the cause in question are chiefly to be noted, at medicinal spas and elsewhere. The occupations of lowest and highest mortality from these causes, with the C.M.F. in each case (Table C) and its ratio to the general average, are as follows:—

Occupations in Order of Mortality from Diseases of the Digestive System.

LOWEST MORTALITY.			HIGHEST MORTALITY.		
Occupation Group.	C.M.F.	Ratio (Table D).	Occupation Group.	C.M.F.	Ratio (Table D).
37 Cutlers	9·6	161	54 Wool carders	96·4	1,620
21 Brick kiln and oven men ...	19·9	334	51 Cotton blowroom operatives	101·9	1,713
24 Other workers in glass ...	23·9	402	160A Textile warehousemen ...	109·8	1,845
15 Slate miners and quarriers ...	26·6	447	140 Dentists	110·5	1,857
77 Woodworking foremen ...	27·9	469	75 Cellarmen	110·5	1,857
114 Tram drivers	32·9	553	148 Actors	130·7	2,197
126 Canvassers and roundsmen ...	33·0	555	153 Barmen	137·3	2,308
3 Farm bailiffs	33·6	565	74 Brewers	186·4	3,133
95 Slate masons	34·0	571	152 Publicans	205·4	3,452
102 Shipwrights	35·8	602	137 Barristers	285·3	4,795

This list is very different from that for respiratory disease, Social Class I being unrepresented amongst the occupations of lowest mortality, all of which belong to Class III with the single exception of slate quarriers (Class IV). The ten occupations of highest mortality, on the other hand, include two professions, barristers and dentists, the rate for the former being much the highest occupational mortality met with (but see page xci). These are the only representatives of Class I in this section of the list, which is mainly composed of three Class III and four Class IV occupations, with one (publicans) from Class II.

Peptic Ulcer.—This is the most important single cause of death in the digestive group, with a C.M.F. of 15·8 for the occupied and retired out of 59·5 for the group, or 27 per cent. of the digestive total (Table C). This form of mortality displays a moderate, and almost regular, gradation from a minimum C.M.F. of 14·3 for Class I to a maximum of 19·8 for Class V, the ratio in Table D rising from 905 to 1,253 (Diag. 3). But when age is distinguished (second part of Diag. 3) this gradation is seen not to extend beyond middle life, after which it is reversed. At each age from 25 to 55, as at 20–65 jointly, mortality is lowest in Class I and highest in Class V, though the gradation is naturally less regular (except at 35–45).

But after 55 the picture suddenly changes. The mortality of Class I is now highest at each age, and after 65 that of Class V is lowest, so that the earlier increase of mortality from Class I to Class V is now replaced by decrease, reaching its maximum in old age, and at 65–70 this decrease is as free from interruption as is the increase at 35–45. It will be seen, therefore, that the C.M.F. gradation assumes the type shown in the diagram only

because the chief manifestations of the inverse type, those at 65–70 and 70–, are excluded in calculating the C.M.F. for the reasons stated on pages 118–124. When all periods of life tabulated are taken into consideration the difference in mortality between the social classes must be much less than that shown in the diagram for the C.M.F.s, as the mortality representing 15 per cent. of the total deaths, occurring at ages over 65, is highly graded in the opposite direction.

Another curious feature of the social distribution of this form of mortality is the class variation in the proportion of its components, gastric and duodenal ulcer. When allowance is made, by use of the C.M.F. values in Table 2, for the effects of differences in age, which, as between these two classes of peptic ulcer, are naturally slight, these proportions are as follows :—

	All Classes.	I.	II.	III.	IV.	V.
Gastric ulcer	64	51	58	67	66	67
Duodenal ulcer	36	49	42	33	34	33
Peptic ulcer	100	100	100	100	100	100

It is, of course, not necessary to suppose that these ratios represent the real facts. The differential diagnosis of the two related conditions being difficult, and the frequency of duodenal as compared with gastric ulcer being a matter of recent recognition, we have only to assume that medical practice amongst the more prosperous classes has made further progress in this direction than that amongst the poorer, to explain the steady change of proportion from a maximum for duodenal ulcer in Class I to a minimum in Class V. But it will be noted that the contrast is between the three “working class” groups, III–V, in which the proportions are practically identical, and Classes I and II. The same facts are put in another way in Table 2, which shows that mortality from gastric ulcer increases without interruption from Class I, in which it is only 72 per cent. of average, to Class V, where it is 130 per cent. (a movement similar in direction but greater in degree than that for peptic ulcer), whereas duodenal mortality moves in the opposite direction from a maximum of 125 per cent. of average in Class I to a minimum of 91 in Class III, rising again to 118 per cent. in Class V. This apparently irrational distribution is explained if we suppose that fatal peptic ulcer is really more frequent in the poorer classes, but that its diagnosis, especially at advanced ages, and in the case of the duodenal form, has made more progress amongst the more prosperous.

If age is taken into consideration, it is seen that the proportion of the total peptic ulcer mortality ascribed to duodenal ulcer decreases with advancing age in every class as well as decreasing from Class I to Class V at every age. The two youngest age groups are omitted in the accompanying statement because the numbers of peptic ulcer deaths, 61 at 16–20 and 147 at 20–25, are too small for the purpose in hand.

Peptic Ulcer Mortality.

Age.	DUODENAL PER CENT. OF TOTAL.					
	All Classes.	I.	II.	III.	IV.	V.
25–	38	75	47	38	29	39
35–	34	56	39	31	33	38
45–	36	48	42	36	35	28
55–	34	41	39	33	31	31
65–	36	45	46	34	32	22
70–	31	44	38	25	23	27

As a consequence of the gradation in differential nomenclature here shown the mortality gradation is increased for gastric and decreased for duodenal as compared with total peptic at those ages, 25–55, at which the total peptic ulcer rates increase from Class I to Class V; and decreased for gastric and increased for duodenal at ages over 55, at which the gradation of the total rates is in the reverse direction. For at the earlier ages, when the contrast is between a low Class I and a high Class V rate for peptic ulcer, duodenal ulcer claims a larger share of the low Class I than of the high Class V peptic mortality, so the class contrast is decreased

for this form of ulcer, while in later life the larger duodenal element in Class I mortality adds, for duodenal ulcer, to the large peptic ulcer Class I excess, while the low Class V duodenal proportion similarly reduces the Class V duodenal ratio. The effect upon gastric ulcer is, of course, the reverse of that on duodenal. The results are shown in Table G. At all ages under 55 the gastric ulcer rates, generally speaking, increase from Class I to Class V, but at higher ages they are, apart from a definite Class I excess, fairly uniform for all classes. Duodenal ulcer, on the other hand, shows a general tendency to uniformity, except for Class V excess, at ages under 45, while in later life there is increasing excess in the higher social ranks, culminating in a ratio of 261 per cent. for Class I at 70-. This contrast may be explained on the supposition that symptoms which in the poor old man lead to a diagnosis of indigestion lead in the rich old man to examination (whether by way of operation or otherwise) resulting in the diagnosis of duodenal ulcer. But nothing in the returns can decide whether this is so or whether in later life duodenal ulcer is in fact very much more fatal to the wealthier, as in earlier life to the poorer, classes. On the whole, however, the evidence may be held to justify the surmise that many fatal cases of duodenal ulcer remain unrecognized among the elderly poor, and that the reversal after 55 of peptic ulcer gradation is largely at least due to the same cause. A generation ago peptic ulcer was regarded as chiefly fatal to young women, whereas the mortality now returned is chiefly of elderly men. It is only necessary to suppose that the change of professional view implied by this fact has made less progress amongst the medical attendants of the poor than of the rich to see how the reversal of the class ratio in later life may be explained. For if the poor man's doctor is less alive to the likelihood of peptic ulcer in his elderly patients than the rich man's he will assuredly meet with proportionately fewer instances of its occurrence. The peptic ulcer reversal is unique in Diag. 3, and there is probably no other disease there dealt with regarding the incidence of which medical views have undergone so great a change in recent years. This explanation is, moreover, supported by the varying class proportions of gastric to duodenal ulcer (page xlii).

If the explanation suggested is correct the reversal of gradation for peptic ulcer as age advances may be compared with the increasing Class I excess for appendicitis (page xliv), as in both cases a recent change of professional view transferring the maximum frequency of death from an earlier to a later period of life appears to have made more progress where the deaths of the richer than of the poorer sections of the community are concerned.

The occupations of lowest and highest mortality from peptic ulcer (Table F) are as follows :—

Occupations in Order of Mortality from Peptic Ulcer.

LOWEST MORTALITY.			HIGHEST MORTALITY.		
—	C.M.F.	Ratio (Table D).	—	C.M.F.	Ratio (Table D).
37 Cutlers	—	—	80 French polishers	34·5	2,184
95 Slate masons	—	—	52 Rag grinders	34·7	2,196
77 Woodworking foremen ...	3·0	190	75 Cellarmen	38·2	2,418
72 Millers	3·5	222	160A Warehousemen (textiles) ...	41·1	2,601
63 Hosiery frame tenters ...	4·8	304	74 Brewers	41·6	2,633
86 Photographers	4·9	310	153 Barmen	47·7	3,019
83 Paper mill workers	5·2	329	50 Wool sorters	49·1	3,108
62 Weavers, not cotton or wool	5·9	373	118 Stevedores	51·6	3,266
24 Other glass workers	6·6	418	53 Cotton carders	56·7	3,589
21 Brick, etc., kiln and oven men	6·8	430	137 Barristers	172·6	10,924

This list calls for little comment, both divisions being of heterogeneous type. The association of cellarmen, brewers, and barmen, whose mortality from cirrhosis of the liver is exceeded only by that of publicans (also of high peptic ulcer mortality), amongst the occupations of highest mortality might suggest a connexion between this disease and alcoholism. But the cirrhosis rate is low for all the other seven occupations of highest peptic ulcer mortality, and the correlation value (for 163 occupations, barristers being excluded) between the C.M.F.s for peptic ulcer and for cirrhosis of the liver is +·270

$\pm \cdot 049$, which does not suggest any very close association. The extent to which the exceptional rate for barristers is dependent on a single death is pointed out on page xci.

Appendicitis.—The social distribution of mortality from this disease represents the opposite extreme in type of that from bronchitis, the death-rate being nearly two and a-half times as great for Class I as for Class V, with uninterrupted descent between. It thus proves to be, even more than diabetes, a cause of death specially affecting the upper ranks of society, though in its case the association is probably much less familiar.

It might indeed be conceived of as unreal, and arising merely from better certification amongst the more prosperous classes, were it not that the difference is far too great to be so accounted for, and that this explanation is negatived by the contrasting case of peptic ulcer. This disease, so similar to appendicitis as regards conditions of diagnosis and treatment, has been seen to have an entirely different social distribution, its death-rate increasing from Class I to Class V. If varying efficiency of diagnosis could account for the social distribution of appendicitis mortality, it would surely have a similar effect in the case of peptic ulcer. But in the case of peptic ulcer grounds have been suggested for suspicion that, if the conditions of diagnosis were equal for all classes, excess for the poor would be increased by recognition of this as the cause of many deaths in later life now otherwise certified. It seems therefore that the causes, whatever they may be, responsible for the increase of appendicitis have affected the upper ranks of society much more than the lower. It may well be, indeed, that the class difference in prevalence is understated by the mortality returns, being to some extent offset by more prompt and efficient treatment for the more prosperous classes of a disease so often calling for surgical intervention. This cause of death was not distinguished in previous reports on occupational mortality, so it is impossible to say whether, as generally for other causes discussed, the experience of 1921–23 is in harmony with that of 1910–12.

Diag. 3 shows that the social gradation increases with age, the type being fully established first at 35–45, and afterwards adhered to, apart from minor variations. This again, like the corresponding feature for duodenal ulcer, may be an effect of the varying conditions of medical practice at various social levels. For the recent history of appendicitis mortality is one of decrease in early life followed by increase later, which becomes greater as age advances. During the 15 years 1911–25, for instance, the death-rate of males aged 0–25 fell by 19 per cent. (notwithstanding large increase at 0–5), that at 25–55 remained practically stationary, and that at ages over 55 increased by 39 per cent. There is, therefore, a strong tendency to increased recognition of this malady in later life at the present time, and if we suppose that this tendency has progressed further, on the whole, with the professional attendants of the wealthier than of the poorer classes it must follow that the excess for these classes, recorded at all periods of life to a greater or less extent, will increase as age advances, which is just what the diagram shows as occurring, until, at least, 65–70, at which age the excess for Class I attains the extraordinary proportion of 254 per cent.

The following 19 occupations experienced no deaths from appendicitis (Table C):—

68	Hat formers etc.	85	Machine compositors.
16	Cement workers.	27A	Puddlers.
86	Photographers.	66	Cutters (clothing).
55	Cotton strippers and grinders.	37	Cutlers.
88	Bookbinders.	40A	Cutlery grinders.
93	Slaters and tilers.	58	Cotton doublers etc.
19	Pottery dippers, glazers etc.	17	Brickmakers.
119	Coal-boat loaders and dischargers.	15	Slate miners and quarriers.
63	Hosiery frame tenters.	100	Rubber workers.
		75	Cellarmen.

Those of highest mortality are :—

Occupation Group.		C.M.F.	Ratio (Table D).	Occupation Group.		C.M.F.	Ratio (Table D).
131	Auctioneers	21·3	2,393	128	Bank officials	23·6	2,652
13A	Tin and copper miners, below ground	21·9	2,461	38	File cutters	24·5	2,753
160A	Warehousemen (textiles) ...	22·0	2,472	59	Wool doublers etc. ...	27·0	3,034
144	Architects	22·1	2,483	74	Brewers	41·6	4,674
57	Wool spinners and piecers ...	23·2	2,607	137	Barristers	52·8	5,933

The 19 occupations of no mortality all belong to Classes III–V, whereas the 10 of highest mortality include 4, auctioneers, architects, bank officials, and barristers, in Class I.

Hernia.—The social distribution of mortality from this cause is the reverse of that from appendicitis, as the C.M.F. ratios show uninterrupted increase from 56 per cent. of average for Class I to 132 per cent. for Class V (Table 2). Similar ratios are shown for each of the ages over 45 (at which 91 per cent. of the deaths occurred) in Table G. At each of these ages the rate was lowest for Class I, and at each, except 70–, highest for Class V. The gradation is greater and more regular at 55–65 and especially at 45–55 (at both of which increase from the Class I minimum to the Class V maximum is uninterrupted) than in later life, but the same tendency is observable at all ages. Two reasons for this distribution obviously suggest themselves. Occupations involving occasional heavy physical strain are likely to suffer more from hernia than others; and the more educated and intelligent sections of society are more likely than others to avoid the risks of established hernia. Prosperity indeed may exert an influence quite apart from intelligence; for just as the rich man may escape death from phthisis by resort to a place and manner of life not available to the poor man, so, if affected by hernia, he has an opportunity of avoiding risk from physical strain which the nature of his occupation may deny to the poor man. It may, indeed, be this factor which accounts for the decrease of social grading with age. The gradation is greatest at 45–55, when heavy work is still carried on, and decreases as work does with further advance of age. Similar gradation, decreasing in the same way with increase of age after 45–55, is recorded for 1910–12 in the Biometrika article referred to on page viii.

Intestinal Obstruction.—This cause of death does not appear to be definitely related to social status. At ages over 55, at which 62 per cent. of the total deaths occurred, there is comparatively little difference between the class mortalities (Table G), and though large differences exist at earlier ages they are so inconsistent—the rate for Class I, *e.g.*, being much the highest of the five at 20–25 (3 deaths), and much the lowest at 35–45 (2 deaths)—that no general relationship can be inferred. And Table 2 accordingly shows the C.M.F.s as lowest for Class III, rising in each direction to 123 per cent. of average for Class I and 119 per cent. for Class V.

Cirrhosis of the Liver.—This disease was included in the abstracts as the best available index to alcoholism in occupational mortality tabulation. In former reports of this series two such measures were employed, alcoholism returned as such and cirrhosis of the liver. But conditions have changed. Whereas in 1910–12 the deaths of 1,339 men aged 20–65 were allocated to alcoholism the corresponding number in 1921–23 was only 315. As one hundred deaths a year in a population of ten million can form only a very imperfect index to the occupational incidence of alcoholism, reliance for this purpose is now placed entirely on cirrhosis of the liver, to which 2,649 deaths within the same limits of age (20–65) were allocated in the three years. It may, of course, be objected that cirrhosis is not necessarily alcoholic in origin, but evidence of its close association with alcoholism in these returns is discussed on page xlvii, and in any case there is no alternative index available. For these reasons cirrhosis of the liver will, despite the possibility of error involved, be discussed as an index of alcoholism. The mortality comparisons for cirrhosis in Table D show that its incidence varies largely in accord with the financial means available for over-indulgence. As in the parallel case of diabetes the highest mortality is returned by Class II, Class I coming next. But whereas the evidence provided by diabetes points to continuous decrease of over-indulgence in food from Class II to Class V, cirrhosis mortality is at a minimum for Class III, and rises again somewhat for Classes IV and V, though not nearly to the level reached for Classes I and II. It seems probable that the excess for Classes IV and V over III is accounted for by deaths of men reduced to these classes by drinking habits, and if so the cirrhosis mortality of these classes may be regarded as representing the drinking habits of a more prosperous past. The general rule therefore seems to hold that alcoholism varies in proportion to the financial means of obtaining so expensive a luxury as alcohol, modified only in the case of Class I by some countervailing influence, possibly prudence exceeding that of Class II, evidence of which appears where both food (diabetes) and drink (cirrhosis) are concerned. This applies also to the returns for 1910–12, which were much better provided with alcohol mortality data. The parallelism between the two periods, notwithstanding defective social classification for 1910–12, is so close, for both cirrhosis and diabetes, that the reality of the relationships indicated

can scarcely be doubted. The percentage ratios of class to total C.M.F.s for the two diseases compare as follows :—

—	All Classes.	I.	II.	III.	IV.	V.
Diabetes—						
1910-12 	100	146	141	92	87	82
1921-23 	100	125	145	92	75	66
Cirrhosis of the liver—						
1910-12 	100	139	173	80	78	105
1921-23 	100	163	187	66	74	87

In three of the four cases mortality is highest in Class II. For diabetes it falls to a minimum for Class V at both periods, but for cirrhosis the fall is not continuous, mortality rising in Class V, presumably for the reason suggested. This rise, it will be noted, went much further in 1910-12, when alcohol was cheaper, than in 1921-23, though this must be partly due to the general overstatement of Class V mortality in 1910-12 referred to on page ix. But the main purpose of comparing the figures in this manner is not to bring out such details but to display their general parallelism, which leaves little doubt in the mind that they indicate real differences of a stable nature.

Mortality from cirrhosis may be to some extent an index rather of spirit drinking than of alcoholism in general. As the increase in price of alcohol, which has contributed to bring about so great a reduction in the mortality ascribable to it, applies mainly to spirits, it might be expected that this increase would affect Class II more than Class I, and to a slight extent this may have been so. The excess for II over I was somewhat greater before the increase of price. But little significance, however, can be attached to this change, as the demarcation between Classes I and II has been considerably changed, many "lower middle class" men formerly grouped with Class I being now in Class II. But the excess for both Classes I and II has considerably increased, presumably as a consequence of the increase in price. It may be partly for the same reason that the ratio for Class V has been reduced from 105 to 87, though this is probably accounted for partly also by overstatement of Class V mortality in general, which is known to have occurred in 1910-12. The general increase of class mortality contrast may or may not indicate the effect of increase in price, as improved social class differentiation must have some similar effect (page v). In 1910-12, when deaths from alcoholism numbered 1,451, the social distribution of this mortality was similar to that of mortality from cirrhosis of the liver. And even in 1921-23, though there were only 348 deaths from alcoholism, it may be seen from Table 2 that these two forms of certification still have a similar social distribution. The Class II maximum is very strongly displayed by alcoholism for ages 20-65, when all but 33 of the 348 deaths occurred, the order II, I, V, IV, III, applying, as for cirrhosis.

As for other causes (diabetes, appendicitis), mortality from which is highest in the classes of low total death-rate, the chance of ultimate death (under 65) from cirrhosis is shown by Table 3 to be in great excess for these classes. It appears to be almost three times as great for Classes I and II as for III-V.

Table G shows how consistently the social distribution indicated in Diag. 3 is maintained at all ages. The mortality in early life is trifling, less than 1½ per cent. of the deaths in occupations occurring before 35. But at each of the five later age periods, for which the class mortalities are compared in this table, very much the same order is maintained. At all, the Class II rate is highest, and at all after 45 the Class I rate, equal at 35-, comes next below it. After these there is, especially at the earlier ages, an extraordinary drop to the Class III rate, which at 35-55 is lowest of all (*see* Diag. 3 for ages over 45).

The following occupations record no mortality from this cause in Table C—tin and copper miners, stone and slate miners and quarriers, brick makers, brick kiln and oven men, puddlers, cutlers, wool sorters, cotton carders, cotton strippers and grinders, weavers (other than cotton and wool), woodworking foremen, shipwrights, shipyard labourers,

omnibus and tram conductors, and Roman Catholic clergy ; and the highest rates are as follows :—

Occupation Group.		C.M.F.	Ratio (Table D).
57	Wool spinners and piecers	25·5	2,656
138	Solicitors	26·2	2,729
19	Pottery dippers, glazers, etc.	26·4	2,750
145	Authors, editors, journalists	29·2	3,042
140	Dentists	39·6	4,125
148	Actors	44·6	4,646
75	Cellarmen	45·1	4,698
153	Barmen	56·0	5,833
74	Brewers	76·8	8,000
152	Publicans	110·9	11,552

Of the 10 occupations of highest mortality three, solicitors journalists and dentists, are assigned to Class I, three each to Classes III and IV, only one, publicans, to Class II, and none to Class V. Publicans form part of a remarkable group of four occupations, all concerned with alcohol, which return the four highest C.M.Fs. in Table C. The significance of this fact admits of no doubt, and together with the correspondence between cirrhosis mortality and financial resources (*vide infra*), it constitutes the evidence of close association of cirrhosis with alcoholism referred to on page xlv. Though publicans are the only representatives of Class II they suffice to account for most of its excess mortality. The actual deaths for the class were 1,453, whereas at the rates for all occupied and retired they would have been 833. Of this excess of 620 deaths, 340, or 55 per cent., were furnished by this one occupation (378 recorded less 38 “expected”). And apart from publicans the cirrhosis C.M.F. of Class II would be 13·12, less than that of Class I, 15·6. It will be seen, therefore, that allowance for the phenomenal mortality of publicans, and for the effects of alcohol in bringing its victims down to Classes IV and V before killing them, can fully explain the departures from the prosperity scale in the distribution of cirrhosis mortality. Broadly speaking, this disease costs money, and is incurred in proportion to financial resources.

Other Diseases of the Digestive System.—This miscellaneous group of causes also shows evidence in its social distribution of the influence of luxury, mortality being highest in Class I, though the fact that Class V comes third points to the simultaneous influence of other factors. The class ratios for all and for “other” digestive diseases compare as follows :—

	All Classes.	I.	II.	III.	IV.	V.
Other	100	135	114	95	92	112
All	100	127	123	88	94	107

In both cases plain living seems on the whole to make for health, but mortality rises again as poverty increases from Class III, whose conditions seem best adapted to digestive health, to Class V.

Table G shows that excess for Classes I and II occurs chiefly after 35, when the effects of overeating may be expected to have most influence (see also digestive diseases, Diag. 3). The rates for Class V, on the other hand from “other” as from all digestive diseases, exceed average at all ages under 55, and fall short of it at all higher ages, so the causes of this mortality, whatever they may be (and they are too diverse for speculation as to this to be profitable) chiefly affect the youthful poor and the elderly rich. The greatest excess of all, indeed, applies to Class I at 20–25, but this is based on nine deaths, only two of which, one of a medical man and one of a dentist, occurred amongst the two-thirds of the Class I population constituted by the occupations distinguished in the abstracts. Apart from this excess, the tendency at ages under 35 is for mortality to increase from Class I to Class V, in contrast with the excess for I and II at higher ages.

Acute Nephritis.—This form of mortality manifests no definite relationship to social status. The C.M.F. of Class I is lowest, but Class II shares the highest place with Class V

(Table 2). The class ratios show little tendency to maintain any definite order at the different ages, but it may be noted that that for Class I is below the general average at each age except the last (70-), when it is in greater excess, 57 per cent., than any other ratio at any age (Table G).

Chronic Nephritis.—This cause of death is returned to much the same extent for all sections of society (Diag. 3). This uniformity was noted also for 1910-12 (*loc. cit.*) and applies, broadly speaking, to the class ratios at separate ages (Table G) also, but here a general tendency may be noted for the rates for Classes I and II to be below average at ages under 35, when, however, only 6 per cent. of the total deaths occur, and above average in later life, most of all at 65-70. The rate for Class III keeps fairly close to average at all ages. At all over 45 (which furnish 86 per cent. of the total deaths) there is a constant mortality order, consisting of an uninterrupted fall from a Class I or Class II maximum (Class II except at 65-70) to a Class IV minimum, with an excess for Class V over Class IV which is common to all ages over 35. This, indeed, is naturally the order displayed in Diag. 3, though in comparison with other causes of death the general impression there conveyed is one of uniformity.

The occupations of lowest and highest mortality from this cause (Table F) are as follows:—

Occupations in Order of Mortality from Chronic Nephritis.

LOWEST MORTALITY.			HIGHEST MORTALITY.		
Occupation Group.	C.M.F.	Ratio (Table D).	Occupation Group.	C.M.F.	Ratio (Table D).
4 Woodmen	9.3	270	13 Tin and copper miners ...	75.5	2,188
15 Slate miners and quarriers ...	9.8	284	52 Rag grinders	77.2	2,238
85 Machine compositors	11.7	339	152 Publicans	78.1	2,264
14 Stone miners and quarriers...	14.7	426	19 Pottery dippers, glazers etc.	79.5	2,304
72 Millers	14.9	432	153 Barmen	88.7	2,571
12 Iron miners	15.0	435	36 Coppersmiths	94.2	2,730
76 Tobacco factory operatives	16.2	470	57 Wool spinners and piecers ...	99.9	2,896
151 Gamekeepers	16.7	484	51 Cotton blowroom operatives	102.9	2,983
3 Farm bailiffs	16.7	484	13A Tin and copper miners be-		
25 Chemical workers	17.4	504	low ground	118.6	3,438
			38 File cutters	215.1	6,232

The ten occupations of lowest mortality include three out of the six of rural type included in the abstracts, and the rates for the other three are also low, their C.M.F. ratios being as follows—farmers, 722; agricultural labourers, 600; gardeners, 577. It appears, therefore, that this disease is associated with the conditions of urban life, and in each of the years 1911-14, for which alone the comparison can be made on existing tabulation, its mortality increased with each stage of urbanization, from a minimum in the rural districts to a maximum in London. Two of the occupations of highest mortality are of known lead risk, viz., pottery glazers (*see* page li) and file cutters, who, though experiencing no mortality from lead poisoning in 1921-23, have consistently done so in the periods covered by previous reports.

No less than four of the ten occupations of highest mortality—publicans, barmen, pottery dippers, glazers, etc., and wool spinners and piecers—are also included in the corresponding list on page xlvii for cirrhosis of the liver. This confirmation of the accepted view that alcohol promotes chronic nephritis is supported by the correlation value obtained for the C.M.F.s for cirrhosis and chronic nephritis of 162 occupations (excluding file cutters and barristers, each returning only one death from cirrhosis) of $+ .419 \pm .044$. Its correlation with cerebral hæmorrhage ($+ .658 \pm .030$) is stated on page xxxiii.

Diseases of the Prostate consist almost entirely of hypertrophy of this organ, of the considerable mortality from which almost 85 per cent. occurs at ages over 65, and so is ignored in determining the C.M.F.s stated in Table 2. These are therefore unreliable, and as it happens, misleading, the excess shown for Class II over Class I disappearing when all ages of importance are taken into account. To obtain a satisfactory summation of the age group mortality rates shown for the social classes it has therefore been necessary to determine the number of deaths which the occupied and retired population over 45 years of age (under which mortality is negligible), which actually yielded 6,250 deaths, would have yielded at the age rates of the various classes. These prove to be as follows:—I, 8,629; II, 8,036; III, 5,790; IV, 5,138, and V, 5,032, corresponding percentages of

the general average being 138, 129, 93, 82, 81. The overstatement of occupational mortality at ages over 65 (page xi) must prejudice the reliability of this comparison, but in dealing with a form of mortality so much restricted to old age it seems necessary to run this risk, which is of the less consequence, as it happens, because the overstatement probably increases from Class I to Class V, and so its effect is presumably to make the contrast just set forth less than it should otherwise be. As in many other cases (Diag. 3) the chief contrast is between Classes I and II and the three working class strata. This feature increases with age (Table G), being at a maximum at 70-, when the rates for Classes III-V are all very similar, though both at this age and 65-70, the continuity of mortality decline from the Class I maximum to the Class V minimum is uninterrupted. In earlier life social gradation is less regular, though it is perhaps significant that it is much less evident for the 857 deaths at 55-65 than for the 103 at 45-55. This suggests, as indeed seems probable on other grounds, that the class differences recorded by the figures are less of fact than of diagnosis. Deaths from this cause, being uncommon under 55, are more likely to be noted, when they do occur, in Class I than in Class V. At 55-65 such deaths are becoming fairly frequent and, being looked for, are found to an extent not varying greatly with class. In old age, however, there is much evidence to show that the search for causes of mortality is prosecuted with less ardour than at earlier stages of life, and if this is so it is easy to understand why the class gradation increases again after 65.

Other Diseases of the Genito-urinary System include chiefly cystitis, urethral stricture, urinary calculi, and diseases of the kidney other than acute or chronic nephritis. Table 2 shows that the chief feature of the social distribution of mortality from these diseases is large excess for Class V, the C.M.F.s. for the other four classes being all within 10 per cent. of average. This distribution is very clearly marked at 35-45 (before which age the mortality in question is of very little importance), becoming less so as age advances, till in old age (over 65) it has disappeared, and at 70- excess for Classes I and II dominates the picture (Table G). In view of the nature of many of the diseases concerned it seems possible that the distribution in earlier life may be related to that of venereal disease (*see* page xx), but without examination of the causes returned individually no definite conclusion can be arrived at on this point.

Old Age.—The C.M.F.s compared for the social classes in Tables 2 and 3 are to some extent misleading as, taking no account of ages over 65, at which 99 per cent. of the total deaths so certified occurred, they merely indicate the extent to which death has been attributed to premature old age. This is done to a widely varying extent in different sections of society, the class ratios increasing from 29 per cent. of average for Class I to 194 for Class V (Table 2).

But if, in order to include all the deaths so returned, all ages at which such deaths have occurred are taken into account, as in the similar case of prostatic disease (page xlviii), this class contrast is considerably reduced, though it still remains large. The rate for all occupied and retired was 2,543 per million, but at the age rates recorded for the social classes it would have been as follows—Class I, 1,351; II, 2,218; III, 2,515; IV, 2,875, and V, 3,160, yielding ratios of 531, 872, 989, 1,131 and 1,243 per 1,000 respectively. So the attribution of death to “old age” is at a minimum in Class I and increases uninterruptedly to a maximum for Class V. The class intervals are very regular, except that that between I and II is about twice as great as the rest. This evidence coincides with much more already quoted in suggesting that death certification is most careful and precise for the upper social ranks, and becomes progressively less so from Class I to Class V. There are doubtless deaths for which a certificate of “old age” represents all the known facts, and is therefore appropriate, but the fact remains that the necessity of resorting to this indefinite form of certification is experienced in proportion, broadly speaking, to the poverty of the patient.

Suicide.—The death-rate does not vary greatly with social class, but is in excess for Classes I and II, especially the latter (28 per cent.) and somewhat below average for III-V (Diag. 3). The rate for Class II is in considerable excess at all ages under 65 (Table G) and that for Class I at 25-45. Excess for these classes forms the main feature of the class distribution at all ages under 65, as expressed in the C.M.F.s (Table D and Diag. 3), but at 65-70, and especially at 70-, there is a tendency to increase of suicide with increase of poverty, from Class I to Class V, contrasting with the excess for Classes I and II at earlier ages. In its general form the social distribution of mortality from suicide resembles that from cirrhosis of the liver. In both cases mortality is in excess only for Classes I and II, more so for II than I, though the excess is not nearly so great for suicide as for cirrhosis, and in both a large fall from the Class II maximum to Class III is followed by

a rise for Class V. But for cirrhosis the range is much greater, and the final rise starts with Class IV. It is not necessary to infer from this similarity that alcohol is the chief cause of suicide, but a considerable association between these two causes of death is indicated by the correlation co-efficient for 163 occupations (excluding barristers, whose cirrhosis rate is based on a single death) of $+ \cdot 373 \pm \cdot 045$.

The distribution of suicide was very similar in 1910-12, a pronounced Class II maximum applying to both periods. This class includes shopkeepers, a large body of men very prone to suicide. Although Class II furnishes the highest mortality, Table 3 shows the proportion of deaths from suicide as rather larger for Class I. Each of these classes is in great excess, from this point of view, of the others, the chances of death from suicide being nearly twice as great for Class I as for Class V.

The occupations returning lowest and highest mortalities from suicide are as follows:—

Occupations in Order of Mortality from Suicide.

LOWEST MORTALITY.				HIGHEST MORTALITY.			
Occupation Group.		C.M.F.	Ratio (Table D).	Occupation Group.		C.M.F.	Ratio (Table D).
36	Coppersmiths	—	—	53	Cotton carders	44·3	1,823
95	Slate masons	—	—	139	Medical practitioners ...	48·9	2,012
135	Roman Catholic priests ...	—	—	51	Cotton blowroom operatives	49·9	2,053
15	Slate quarriers	5·6	230	63	Hosiery frame tenters ...	55·0	2,263
136	Nonconformist ministers ...	6·9	284	118	Stevedores	56·5	2,325
61	Wool weavers	7·0	288	152	Publicans	63·4	2,609
68	Hat formers, plankers, stiffeners	7·3	300	74	Brewers	64·4	2,650
100	Rubber workers	7·3	300	13	Tin and copper miners ...	74·9	3,082
142	Music teachers	8·5	350	50	Wool sorters... ..	78·1	3,214
114	Tram drivers	8·8	362	13A	Tin and copper miners be- low ground	94·2	3,877

Three occupations, all of small size, were free from suicide during the three years. Two of the three groups of clergy distinguished figure among the ten occupations of lowest suicide mortality, but the third, Anglicans, holds position (Table F) and ratio (Table D), 93, 1,008. Except for the two clerical occupations those of lowest mortality seem on the whole very diverse. Of the ten highest rates it seems significant that four are returned by textile occupations (16 in all). Two are obvious instances of the association with alcoholism discussed above, and one, medical practitioners, presumably to some extent represents a consequence of constant occupational contact with convenient means of suicide. The rates for Cornish miners suggest that in their case at least excessive mortality from natural causes serves rather to promote than to discourage suicide.

Accident.—Diag. 3 shows that mortality from this cause increases from a minimum of 70 per cent. in Class II to a maximum of 129·4 per cent. in Class IV (Table D), the main movement thus being increase downwards along the social scale, though the rate for Class I is a little higher than that for Class II, and the rate for Class V a little lower than that for Class IV. Table G largely supplies the explanation of the excess for Class I over Class II, as it shows that it chiefly applies to ages 16-20 and 20-25, at the latter of which mortality is at its highest for Class I. This presumably means that expensive modes of accidental death, such as mountaineering, are more indulged in by this class at the adventurous stage of life than by any other. In old age (70-) the gradation is strictly on social lines, from a Class I minimum to a Class V maximum, and as accidental death at this time of life often results from lack of care of persons unable by reason of infirmity to care for themselves, it is only to be expected that this form of mortality should be distributed in proportion to the supply of resources, both financial and intellectual, available for the care of the infirm. The fact that at ages under 70 the rates for Class IV exceed those for Class V (except at 45-55, when they are equal) seems to imply that on the whole Class IV occupations are of a more dangerous nature, and in illustration of this it may be pointed out that of the ten occupations quoted below as of highest accident risk six belong to Class IV, and four to Class III, but none to Class V.

It may probably be said, then, that there is a strong general tendency for accident risk to increase downwards along the social scale, from Class I to Class V, but that this movement is reversed as between Classes I and II in youth as the result of adventurous

sport, and as between Classes IV and V at the working ages generally, by higher occupational risk, so that it only becomes manifest in this case after working life has ceased.

The occupation groups of highest and lowest accident mortality are shown by Table F to be as follows:—

Occupations in Order of Mortality from Accident.

LOWEST MORTALITY.			HIGHEST MORTALITY.		
Occupation Group.	C.M.F.	Ratio (Table D).	Occupation Group.	C.M.F.	Ratio (Table D).
19 Pottery dippers glazers &c.	—	—	7 Coal hewers and getters ...	102·6	2,081
101 Brushmakers ...	7·8	158	90 Building trade foremen ...	103·0	2,089
76 Tobacco factory operatives	8·6	174	96 Platelayers ...	109·9	2,229
71 Boot factory operatives (not clickers) ...	8·7	176	14 Stone miners and quarriers...	110·5	2,241
88 Bookbinders ...	8·7	176	6 Coal mine — subordinate superintending staff ...	131·2	2,661
47 Watchmakers ...	8·9	181	117 Bargemen and boatmen ...	146·5	2,972
59 Wool doublers ...	9·3	189	10 Coal mine—miscellaneous underground workers ...	152·7	3,097
60 Cotton weavers ...	11·0	223	9 Coal mine—persons making and repairing roads ...	161·4	3,274
41 Metal polishers ...	11·2	227	109 Railway shunters, points-men, etc. ...	164·2	3,331
114 Tram drivers ...	12·8	260	8 Coal mine—conveyors of material to shaft ...	211·3	4,286

It is a striking testimony to the safety of the tram, commented on in the Statistical Review for 1924 (Text, page 110), that tram drivers find a place in a list of the ten occupations, out of so large a total as 178, of lowest mortality from accident. The list of highest mortalities is very much what might have been expected. It will be noted that it is made up to half its extent of coal mining occupations, all five of the underground coal mining occupations in Table F being included. Of the other five, two, platelayers and shunters, belong to railway, and a third, bargemen, to other transport. Transport may, indeed, claim a large share in the highest risk of all, that of conveyors of material to the mine shaft, and the transport and mining occupations, seeing that the latter include stone miners and quarriers, account for nine out of the ten highest risks in the list, the one exception being builders' foremen. And, presumably, the highest accident risk of all is that of another transport occupation, merchant seamen (Appendix B), though the form in which the deaths are returned only enables us to state their C.M.F. from all forms of violence at 389·7, the highest rate in Table C for suicide and accident combined being coal mine conveyors of material to shaft, 236·3.

Lead Poisoning.—As only 150 deaths of males from occupational lead poisoning were recorded during 1921–23 this cause of death is no longer given a place in the abstracts, but the 150 deaths are shown, by occupation (and in some cases industry) and age, in the following table.

TABLE 7.—Occupational Lead Poisoning—Number of deaths of Males aged 16 years and over by Age and Occupation, and Crude Death-rate per million living, 1921–23.

Note.—The numbers after the title of the occupation are industry code numbers.

Occupation Code No.	Occupation.	Total over 16.		16–	20–	25–	35–	45–	55–	65–	70 and up.
		Deaths.	Crude Death-rate per million.								
100	Employers and Managers (Bricks and Pottery)	1	99	—	—	—	—	1	—	—	—
101	Foremen (Bricks and Pottery)	1	217	—	—	—	—	—	1	—	—
105	Potters, Ware Makers, Casters and Finishers....	1	41	—	—	—	—	1	—	—	—
107	Pottery Dippers and Glazers ...	7	3,348	—	—	—	4	1	2	—	—
109	China and Earthenware Kiln and Oven Men (063)	17	1,060	—	—	—	8	3	5	1	—
109	Brick and Tile Kiln and Oven Men (060–2)	1	63	—	—	—	—	—	1	—	—
141–9	Chemical Process Workers in Red and White Lead Works (090)	3	1,894	—	—	—	1	2	—	—	—

TABLE 7—continued.

Occupation Code No.	Occupation.	Total over 16.		16-	20-	25-	35-	45-	55-	65-	70 and up.
		Deaths.	Crude Death- rate per million.								
152	Paint Grinders	2	313	—	—	—	1	1	—	—	—
158	" Other " Skilled Paint Makers (090-2*)	1	340	—	—	—	—	—	1	—	—
160	Employers and Managers (Plumbing) (467)	2	122	—	—	—	1	—	1	—	—
279	Blast Furnace Workers, unskilled (110)	1	47	—	—	—	—	—	1	—	—
171, 278,	} Persons engaged in the Smelting of Zinc and Spelter (122)	4	3,463	—	—	—	—	1	1	2	—
279											
	Persons engaged in Rolling Mills, Tube and Pipe Making—Non-Ferrous Metals (140)—										
169	Foremen	1	1,255	—	—	—	—	1	—	—	—
178	Rollers	1	281	—	—	—	—	1	—	—	—
278	" Other " Skilled Workers	2	560	—	—	—	—	1	1	—	—
183	Iron Foundry Labourers	1	9	—	—	—	—	1	—	—	—
222	Boiler Makers, Platers, &c.	1	7	—	—	—	—	—	1	—	—
235	Gas Fitters	1	27	—	—	—	1	—	—	—	—
242	Lead Burners	1	327	—	—	—	—	1	—	—	—
251	Pipe Fitters	1	63	—	—	—	—	—	1	—	—
252	Plumbers	14	98	—	—	1	2	5	3	2	1
253	Plumbers' Labourers	1	35	—	—	—	—	1	—	—	—
264	Tinsmiths and Sheet Metal Workers	2	20	—	—	—	—	1	—	—	1
302	Accumulator Makers and Pastors	1	731	—	—	—	—	1	—	—	—
470	Employers and Managers (Wood Working)	1	16	—	—	—	—	—	—	1	—
474	Carpenters	1	2	—	—	—	—	1	—	—	—
476	Coachbuilders	1	15	—	—	—	—	1	—	—	—
477	Coopers at Red and White Lead Works (090)....	1	4,065	—	—	—	—	—	—	—	1
522	Hand Compositors	3	35	—	—	—	—	1	1	1	—
529	Printing Machine Minders	1	18	—	—	—	—	1	—	—	—
531	Printers (so returned)	1	21	—	—	—	—	—	1	—	—
590	Employers and Managers (Painting and Decorating)	4	121	—	—	—	—	2	—	2	—
591	Foremen (Painting)	1	138	—	—	—	—	—	1	—	—
592	Painters and Decorators	63	136	—	—	—	14	24	15	7	3
599	Painters' Labourers, &c.	1	24	1	—	—	—	—	—	—	—
602	Rubber Mixers, Spreaders, and Moulders	1	95	—	—	—	—	—	1	—	—
729	" Other " Road Transport Workers	1	14	—	—	—	—	1	—	—	—
931, 933, 939	Clerks (not Civil Service or Local Authority)	1†	1	—	—	—	—	1	—	—	—
970-1	General and Undefined Labourers	1	0	—	—	—	—	1	—	—	—
	All Occupied and Retired Civilian Males	150	4	1	—	1	32	56	38	16	6

* Industry 090, Manufacture of Red and White Lead.

† Employed by a firm of Painters and Decorators.

Lead mortality may be seen from this table to be almost confined to three occupations—potters, painters, and plumbers—which furnish 80 per cent. of the deaths. Including employers and managers, foremen, and labourers in each case, the deaths in Table 7 may be summarized as follows :—

	Per cent. of total.
Potters	27 18
Plumbers	18 12
Occupations akin to plumbing	4 3
Painters and decorators	69 46
Other deaths probably due to paint	2 1
Workers in white and red lead	7 5
All other occupations	23 15
Total	150 100

In arriving at these figures the death of a lead burner, or chemical plumber, has been included with other deaths of plumbers. The occupations classed as akin to plumbing are gasfitters and pipe fitters, both of whom, like the plumber, make pipe joints with red lead, and tinsmiths, who, like the plumber, use lead in the form of solder. The two deaths classed as probably due to paint, though not of painters, are those of a coachbuilder and of a clerk employed by a firm of painters. The first implies occupational association with paint, and the clerk may have been a painter given clerical work by his painting firm because of lead poisoning, or if not may have been brought into close occupational association with painting. The seven white and red lead workers include three chemical process men in lead works, two paint grinders (using these materials), one other paint worker, and a cooper in a lead works.

The 23 deaths in miscellaneous occupations include five in printing, and four each in zinc smelting and in the rolling, &c., of non-ferrous metals, so the mortality is very closely confined to occupations of known lead risk.

The degree of risk in each case is indicated, in a very rough way, by the death-rates in Table 7. As the numbers are so small no attempt has been made to allow for variations in age between the occupations compared. The most serious risks appear to apply to certain of the pottery occupations, but by far the greatest number of deaths (46 per cent. of the whole) occurs amongst painters.

It may be of interest to record the deaths from chronic lead poisoning not returned as occupational in origin during the same period (1921-23). These amounted to ten, seven of males and three of females. Three were attributed to lead in drinking water and one to lead in beer. Three more were due to the drinking of water from a household hot water boiler containing lead and copper compounds. Three were ascribed simply to chronic lead poisoning without record of its probable source. As these were all of adult males, it seems possible that they were of occupational origin.

As it has recently been stated that lead confers such complete immunity from cancer that lead burners never die from this cause, their record has been examined on this point. During the three years these men, 1,018 in number at the census, suffered two deaths from cancer, in both cases of the stomach, one at 45-55 and the other at 55-65. The crude death-rate resulting from these figures is 0.65 per 1,000, comparing with 1.74 for the occupied and retired. But from such scanty data the only certain conclusion to be drawn is that lead burners can die from cancer like other people. The cancer ratios (Table D) for the chief lead risk occupations are as follows:—

Group No.

19	pottery dippers, glazers, &c. . . . .	..	..	..	..	1,519
20	china, &c., kiln and oven men . . . . .	..	..	..	..	1,564
42	plumbers . . . . .	..	..	..	..	839
98	painters and decorators . . . . .	..	..	..	..	1,069

MORTALITY OF OCCUPATIONAL GROUPS (pp. 5-116).

In the following pages the mortality of the various occupations, both from all causes jointly and from those distinguished in Tables C D and F, will be compared from the points of view of each of the two latter tables. That is to say that the ratios of the occupational C.M.F.s to the mean for all occupied and retired civilian males will be studied in conjunction with the "positions" recorded in Table F for each occupation under each cause. In the preparation of this table, the C.M.F.s for each of the 178 occupational groups included in it have been arranged in order of magnitude for each cause of death dealt with, starting with the lowest. Thus, for influenza, the C.M.F., 6.2, for barristers is the lowest in the occupational list, and is given position 1, while that for grinders of cutlery, 106.7, is highest, as expressed by position 178. It is thus possible from this table to ascertain not only the highest and lowest occupational mortalities, from the various causes, as stated in lists in previous reports, but the precise rank of every occupation under every cause dealt with, whether it is found near the top or bottom of the list or intermediately. It is only necessary to remember that rank 1 means lowest and rank 178 highest occupational mortality under each cause, in order to read the table. In some cases a few occupations return no deaths from a certain cause. This is indicated by the sign — in the table, and the occupation of lowest recorded mortality then takes rank after these. Thus, seven occupations with no recorded deaths head the list for diabetes, and the highest numbered position is then 8. Occupations returning the same C.M.F. are given equal rank, following that of highest rank above theirs, but if there are two of them, the next rank is missed, and if three, the next two ranks, &c. Thus, Anglican clergy, bank clerks, and clickers all return the same diabetes C.M.F., 9.5, and are all allotted rank 61, which happens to be followed by three other occupations each of C.M.F. 9.6, and each receiving rank 64, the next being 67. In interpreting the figures extracted from Table F, confusion will be avoided by bearing in mind that high rank corresponds with low mortality.

All occupation groups for which C.M.F.s are shown in Table C have been included in Table F, even though a few of them are merely sub-divisions of others. In the following pages the first figure quoted for an occupation after any cause is its position for that cause in Table F, and the second the ratio of its C.M.F. for that cause to that of all occupied and retired males, taken as 1,000 (Table D). Thus, for waiters, cancer

(178, 2003) means that their cancer C.M.F., 257·2, is the highest for any of the 178 occupational groups compared, and is 200·3 per cent. of average; and for Anglican clergy, phthisis (6, 321) means that five occupations yield lower rates than their C.M.F. of 52·5, which is 32·1 per cent. of average. Naturally, these indices point very much in the same direction, but each forms a useful supplement to the other. The same ratio, for instance, may be of much more significance for one cause than another. Occupational mortality from some causes, such as phthisis, varies much more than from others, such as cancer, and we find accordingly that the same ratio is more significant for cancer than for phthisis. Waiters (178, 2003) have twice the average mortality from cancer, and tobacco factory operatives (160, 2002) from phthisis, but for waiters this implies the highest cancer mortality of the 178 occupations, while the phthisis mortality of tobacco workers is exceeded by that of 18 other occupations.

On the other hand, as a certain number of small occupations, including 14 subdivisions of the 164 occupation groups dealt with, have been included in Tables E and F on account of some special risk involved, the occupations of highest mortality tend to be smaller (in numbers at risk) than the average. For this reason average mortality implies a position less than half way down the list, which would of course be 89 or 90 in a list of 178 occupation groups. Thus group 145, journalists, etc., whose total mortality is nearest average with a ratio of 1003 (Table D), hold position 77 in Table F, well above midway; and position 89 in this table is held by group 147, proprietors and managers of theatres, &c., whose C.M.F. ratio in Tables B and D is 1020.

1-5. *Agricultural occupations* as a whole return, as always, a very favourable mortality experience. For the whole Order, comprising 876,400 males aged 20-65 at the 1921 census, the mortality ratio (deaths which actually occurred at these ages per cent. of those which would have occurred if the mortality at each age had been that of all occupied and retired civilian males) was only 68; and for each occupation distinguished it was below average, the highest ratio being 87 for a comparatively small group of 2,687 estate labourers (Table A). This mortality is distinctly below that of the rural districts in which agriculture is mainly carried on. The rates in 1921-23 for agricultural labourers, whose mortality is slightly above that of agriculturists in general (69:68, Table A), compare as follows with those for the rural districts in 1921-23 at certain ages:—

Deaths per 100,000 Living.

					Agricultural Labourers.		Rural Districts. All Males.	
25-35	..	..	..	..	340	..	..	385
35-45	..	..	..	..	416	..	..	517
45-55	..	..	..	..	730	..	..	848
55-65	..	..	..	..	1,727	..	..	1,905

As the population of the rural districts is largely composed of agriculturists (in 1921 the number of males aged 20-65 engaged in agriculture in England and Wales was 42 per cent. of the number at the same ages enumerated in the rural districts) the contrast in mortality between agriculturists and the population amongst which they live must be considerably greater than that expressed by the above figures. The extent of this advantage at different periods of life (over the general average for all areas, urban and rural) can be seen in Table B for the five agricultural occupation groups distinguished in the abstracts. Generally speaking, it is large in early and middle life, and considerably less in old age. Farmers, especially, start working life with a very great advantage, which in their case is reduced almost regularly as age advances. In early life their mortality is much lower than that of their labourers, but from 35 on very much the same.

One of these occupations, that of Farm Bailiffs and Foremen, is remarkable as returning the lowest mortality, as measured by the C.M.F. of the 178 occupation groups dealt with in the abstracts. This may be seen from Table E, which shows that these men come first on the list (*i.e.*, have the lowest C.M.F.) at 20-65, second at 25-35 and 45-55, third at 55-65, fourth at 35-45, and seventh at 20-25—a remarkable record of consistently low mortality as compared with other men of the same ages. At ages over 70, however, their rate is rather high, being exceeded by those of only 34 other occupations (but see page xi).

The consistently low mortality of farm foremen during the working period of life is a feature common also to other groups of foremen, as follows : —

Position (Table E).

	Ages.							
	20-65	20-	25-	35-	45-	55-	65-	70-
Farm bailiffs, foremen ..	1	7	2	4	2	3	20	144
Woodworking foremen ..	5	47	9	1	12	12	54	58
Builders' foremen	15	11	17	8	27	20	37	94
Coal mines, subordinate superintending staff ..	27	26	48	7	24	57	119	163
Railway officials	10	—	18	8	15	22	62	42

The first three of these groups are the only ones out of the list of 178 described as foremen, but the fourth is evidently of the same nature. At all ages under 65 each of these groups of foremen stands high in the list of 178 occupations, the lowest position being 57th at 55-65 for the mining superintendents. So consistent a record requires explanation, and two possible reasons for it suggest themselves—(1) selection for promotion to foreman rank partly on grounds of health, and (2) a tendency to exaggeration of industrial status in filling up the census schedules. As to (1) it seems unlikely that a man of bad health record or subnormal capacity for work would be selected for the post of foreman, but how far such conscious or unconscious application by employers of the test of physical fitness in selecting foremen suffices to account for their low mortality must remain uncertain. As to (2) there is evidence in the tables of a tendency to magnification of office in the statement of occupation on the census schedules by the persons concerned which probably does not apply in like degree when entry of their occupation in the death register has to be made by an official not subject to the same very natural tendency. If in this way the population of foremen tends to be overstated while their deaths are not, under-statement of their mortality must result. It may be noted in Table A that the mortality of company secretaries and registrars, and of heads of commercial office departments, is remarkably low, much lower than for the Church or any other profession, for which, generally speaking, correspondence between the entries in the census schedules and the death registers must be good, owing to the existence of an occupational definition in the form of a professional qualification. Unless physical qualifications are a very important factor in regard to promotion in commercial as well as in manual work, the second explanation seems the more applicable in this case.

It would appear, therefore, that farm bailiffs owe their proud position to the conjunction of two favouring influences—agricultural occupation and foreman status. Like the mining deputies, &c., they fall away sadly in old age, their mortality at ages over 70 being 32 per cent. above average (Table B). Selection has naturally ceased at these ages, but such a reversal of experience of earlier life is not to be explained on this ground alone. The unreliable nature of the death-rates at this age (page xi) has to be borne in mind.

Table D shows the mortality of farmers to be below the average from every cause distinguished in that table (and these in combination represent 86 per cent. of their total mortality—Table C) except diabetes, appendicitis, and suicide. The excess of 31 per cent. from diabetes may be associated with free consumption of an abundant food supply (see page xxxi). It resembles the only other disease, mortality from which specially affects farmers—appendicitis—in its record of special fatality to the more comfortable classes (Diag. 3). These facts suggest that farmers, whose C.M.F. ratio from digestive diseases generally, 98·5 per cent., is out of proportion to their ratio of 67·4 per cent. from all causes jointly, may suffer from the effects of good living, even though this is not recognized as a cause of appendicitis. Excess of suicide amongst farmers is common also to their bailiffs, and may find its explanation in the peculiar anxieties and risks of a calling so much at the mercy of the weather.

Gardeners return a very consistent record of low mortality, the only cause in excess being, again, appendicitis. Consistently low mortality from all the causes distinguished in Table D is, indeed, a characteristic of all the agricultural occupations. It reaches its maximum, for that table, with agricultural labourers (including shepherds), whose standardized mortality is above average from no cause, though it just reaches average in the case of suicide. No other occupation except carpenters can claim this distinction.

6-11. *Coal Miners*.—As a whole, but excluding the subordinate superintending staff (group 6), these workers suffered a mortality at 20-65 in excess of average by 3·4 per cent. (Table B). This is a new experience, previous reports of this series having consistently shown them in a favourable position at these ages. After 65 the excess increases to about

15 per cent. As this happens to be one of the few occupations the 1921 returns for which are fairly comparable with those of earlier censuses, their mortality per 100,000 at each age is compared as follows with that for 1910-12, for all ages common to the two reports :—

		20-25.	25-35.	35-45.	45-55.	55-65.
1910-12 ..	..	383	439	670	1,265	3,007
1921-23 ..	..	377	416	629	1,116	2,823

At each of these five ages mortality has declined, but not so much as for other occupations as a whole, percentage reductions for coal miners and for all occupied and retired civilian males between 1910-12 and 1921-23 comparing as follows :—

		20-25.	25-35.	35-45.	45-55.	55-65.
Coal miners (7-11) ..	..	1.6	5.2	6.1	11.8	6.1
Occupied and retired ..	..	—	15.3	19.5	21.1	14.4

The mortality of coal miners at these ages bore the following percentage ratios to that of the occupied and retired generally at the two periods.

		20-25.	25-35.	35-45.	45-55.	55-65.
1910-12 ..	..	109	93	84	86	100
1921-23 ..	..	107	104	98	97	110

Thus, a very slight improvement in relative mortality for miners at 20-25, an age group of the occupied population which did not share in the general reduction applying to higher ages, is accompanied by a very definite deterioration of their position at each subsequent age, greatest at 35-45, at which age their former advantage was at its height. Indeed, it is only at 35-55 that miners now hold any advantage at all.

These changes are noted in the Report of the Royal Commission on the Coal Industry (1925), page 196, which goes on to suggest that this relatively increased mortality among coal miners may possibly be due to the large number of men who entered the industry during and after the war, and who were, perhaps, less robust than the average coal miner before the war. A memorandum on this subject prepared in this Department is printed as Appendix 32 to the Commission's Report. It points out that practically all causes of death except accident have contributed to the deterioration of the comparative mortality of coal miners, as shown by the following table.

TABLE 8.—*Mortality of Coal Miners (7-11) from various Causes per cent. of that of All Occupied and Retired Males, 1910-12 and 1921-23.*

	25-35.		35-45.		45-55.		55-65.		Standardized Mortality (C.M.F.).	
	1910-12.	1921-23.	1910-12.	1921-23.	1910-12.	1921-23.	1910-12.	1921-23.	1910-12.*	1921-23.†
All causes	93	104	84	98	86	97	100	110	92	103
Tuberculosis	53	73	52	75	58	73	66	90	56	77
Cancer	73	82	79	103	79	85	78	86	78	87
Diseases of the Nervous System ...	85	105	78	91	73	104	102	116	85	105
" " Circulatory System ...	88	85	82	86	93	88	100	105	93	95
" " Respiratory System ...	84	102	82	97	102	110	134	149	109	123
" " Digestive System ...	85	91	66	83	68	77	88	90	78	86
" " Genito-urinary system ...	65	92	75	83	54	71	76	83	67	81
Phthisis	50	71	49	74	56	72	75	88	54	76
Diabetes	83	83	88	100	60	62	48	41	60	64
Tabs Dorsalis and General Paralysis of the Insane	63	125	71	90	69	96	76	90	72	95
Cerebral Hæmorrhage	75	100	71	91	62	98	103	116	86	109
Valvular Disease of the Heart ...	100	82	85	92	95	107	105	119	97	107
Aneurysm	—	—	56	67	82	64	71	68	71	66
Bronchitis	60	100	94	90	109	114	149	180	134	149
Pneumonia	89	102	80	99	99	106	111	111	96	107
Cirrhosis of the Liver	50	—	50	25	50	47	61	77	54	58
Bright's Disease	64	89	67	82	45	60	70	80	61	76
Suicide	64	78	52	80	54	74	74	104	58	86
Accident	284	270	249	251	233	232	216	209	246	237

* Relates to ages 25-65.

† Relates to ages 20-65.

Although the basis of the C.M.F. figures compared differs slightly at the two periods, covering ages 25–65 for 1910–12 and 20–65 for 1921–23, yet, as comparison is made in each case with the corresponding figure for all occupied and retired males, it can be little affected by the slight widening of the basis at the later period.

The only causes distinguished in the table yielding lower C.M.F.s in 1921–23 than in 1910–12 as compared with those for other occupations are aneurysm and accident, for the latter of which the relative change is slight, though the actual reduction of mortality is large. As to other causes, the memorandum referred to points out that from causes from which the mortality of miners was especially low in 1910–12, such as phthisis, their advantage is now much less, while causes showing heavy mortality for miners at the earlier period, such as bronchitis at ages over 45, show a still heavier mortality now. In weighing these facts, it must not be forgotten that the rate of mortality from tuberculosis among coal miners was extremely low in 1910–12 (as it still is at all age groups under 55), so that, having regard to the general decline in this form of mortality it could hardly be expected that the same percentage superiority would continue to be maintained. With regard to mortality from bronchitis and pneumonia, the miners' record from which is relatively unfavourable at ages over 45, we must not forget that the coal-mining industry is carried on chiefly in parts of the country where the mortality from these causes in the general population is high (*see* Statistical Review for 1925, Tables XLVI–XLVIII).

Analysis by cause thus throws very little light upon the reason for the relative increase which has occurred in the mortality of miners. If any relative deterioration in their conditions of work were to blame for the change, one would expect those causes chiefly influenced by these conditions (particularly the respiratory diseases) to be more affected than others. But cancer, which one would not expect to be influenced by conditions in the mines, shows practically as much relative increase as respiratory disease. Possibly some deterioration in the type of man employed in the mines may have occurred as a result of the large influx of new human material which occurred during the war. This would presumably have the effect of an all-round increase in mortality, such as is seen to have occurred. Whatever the causes were which had established the coal miner in his favourable position before the war—selective recruitment for a physically exacting but, on the whole, healthy occupation may have been one—they would be likely to be much affected by such a change of personnel as the war must have brought about. This, however, is mere speculation, though consistent with the facts.

Coal miners are in this Report divided occupationally into six groups—subordinate superintending staff, hewers and getters, conveyors of material to the shaft, makers and repairers of roads, other workers below ground, and workers above ground.

The distinctions between these groups are partly indicated by their titles, but can be better appreciated in the light of a knowledge of their differences in age. This is afforded by Table L of the General Report on the Census of 1921, which shows the numbers at different ages per 1,000 at all ages. The main features of the age distribution are more evident when the eleven age groups of this table are condensed to three, as follows:—

Proportion to total Coal Miners.					<i>Ages.</i>			<i>All</i>
					<i>Under 20</i>	<i>20–55</i>	<i>Over 55</i>	<i>ages.</i>
6	Owners, agents, managers	..	..	..	35	743	222	1,000
41	Subordinate superintending staff	..	..	..	9	823	168	1,000
530	Hewers and getters	..	..	..	100	820	80	1,000
159	Conveying material to the shaft	..	..	..	538	443	19	1,000
58	Making and repairing roads	..	..	..	61	713	226	1,000
93	Other workers below ground	..	..	..	147	683	170	1,000
113	Workers above ground	..	..	..	267	570	163	1,000
<hr/> 1,000 <hr/>								

Much the largest group—53 per cent. of the whole—is formed by hewers and getters, who are men in the prime of life, more than half of them being between 25 and 45 years of age. Next come the conveyors of material to the shaft, almost 16 per cent. of the total. These are chiefly boys and youths, 54 per cent. being under 20 years of age, and less than 2 per cent. over 55. Workers above ground, over 11 per cent. of the whole, include a larger proportion of boys (under 14) and old men (over 70) than any other group. At the prime of life, 20–55, their numbers are relatively low, the youthful conveyors of materials alone providing lower proportions at these ages. Evidently men who can secure places

as hewers do not as a rule work above ground. Makers and repairers of roads form less than 6 per cent. of the total. Compared with other underground employments this is an old man's job, the proportion aged over 55 being much higher here than in any of the other underground occupations distinguished.

Table D shows that standardized mortality is 6 per cent. below average for hewers and getters—the main body of workers—and 18 per cent. below for the subordinate superintending staff, the latter sharing the favourable experience common to foremen generally (page lv). Indeed, only 26 out of the 178 occupations compared in Table F return a lower C.M.F. than these mining superintendents. But the other four occupations dealt with all experienced a mortality about 20 per cent. in excess of average, the degree of excess varying from 18 per cent. for workers above ground to 23 for miscellaneous workers below. It is the youthful members of this group who experience the high mortality, their excess at 16–20 being 77 per cent., and at 20–25, 50 per cent. (Table B). Road workers are also subject to heavy mortality (55 per cent. excess) at 20–25. This excess of mortality is partly accounted for by accident, a risk which for coal miners in general is 136·5 per cent. in excess of average, reaching a maximum of 328·6 per cent. excess for the youthful conveyors of material (Table D). But even apart from accident the mortality of these “other” (group 10) workers is high. Many causes contribute to this, their excess of mortality at 16–20 being large from influenza, tuberculosis, cancer, diabetes, nervous diseases, heart disease, and respiratory disease. This would suggest that the miscellaneous employments constituting this group are largely followed by youths whose health forbids the more strenuous and remunerative calling of hewer. At all ages under 65 the mortality of hewers and getters is below the average for miners, indicating that these are picked men. At all ages their mortality from accident is below the miners' average, though at most it is about double the average for all occupations.

Apart from accident (169, 2081) Table F shows no high mortality from any cause for these men. Their worst position for any other cause in this table is bronchitis (130, 1425).

The mortality records have, at the instance of the Mines Department, been separately assembled (on pages 95–112) for the fourteen coalfields shown in Tables 9–14, which deal separately with hewers and getters, other underground workers, and workers above ground.

Table 9 brings out some apparently inconsistent differences between the mortality experience of hewers and getters and of other underground workers in the various fields, which can only be noted here, without discussion. The lowest rates both for hewers and for others underground are those of the Leicester Warwick and South Derby field, 81·3 per cent. of the coal miners' average for hewers and 62·2 per cent. for others. There is far more variation for other workers than for hewers, the highest excess for “others,” 24·9 per cent. in Glamorgan, also being greater than that for hewers, 21·0 per cent. in what may be called the West Wales field. Three fields—Cumberland, Lancashire and Cheshire, and Glamorgan—return rates in excess of average for both hewers and other underground workers, and six—Northumberland, Durham, Derby, Leicester, &c., Monmouth, and Gloucester-Somerset—rates below average for both, but the Notts. experience is distinctly favourable for hewers though unfavourable for others, while in the remaining four fields—the West Riding, both Staffs. fields, and West Wales—a rate in excess of average for hewers is accompanied by one below average for others. The mortalities at ages are in general harmony with the C.M.F. ratios just quoted. Thus hewers' rates in Leicester are below average at every age, and those for other workers in excess only at 20–25 and 70 and over. The hewers' excesses in Lancs. and in West Wales are also very widespread. There is far more local variation of mortality for above ground than for underground workers, and a more definite association with geographical situation. The rates are highest in the North of England and lowest in the Midlands, those of South Wales being intermediate. The progression from a maximum of 58·3 excess in Durham and Northumberland, *via* Lancashire and Yorkshire, to a minimum in Derby and Notts., is uninterrupted, and here again the age rates are in general harmony with those for all ages.

The C.M.F.s by cause and coalfield are recorded for hewers in Table 10 and for other underground workers in Table 12, and the ratio of these to those for corresponding workers in England and Wales in Tables 11 and 13.

TABLE 9.—*Mortality at various Ages of Coal Miners in different parts of the country as compared with that of the same Occupation in England and Wales taken as 100 in each case—1921–23.*

	Age 20–65. (C.M.F.)	16–	20–	25–	35–	45–	55–	65–	70 and over.
Hewers and Getters (042).									
England and Wales	100·0	100	100	100	100	100	100	100	100
Northumberland	88·5	52	85	104	92	80	89	73	63
Durham	87·8	64	104	103	88	87	83	84	58
Cheshire and Lancashire	118·2	64	119	103	117	112	126	135	144
Yorkshire, West Riding	103·9	65	116	103	115	109	96	110	125
Nottinghamshire	88·6	22	79	79	90	96	87	72	67
Derbyshire, excluding the South Derby- shire coalfield	82·7	69	68	84	86	91	79	83	118
The North Staffordshire coalfield	108·2	49	105	108	99	107	113	110	110
Staffordshire (excluding the North Stafford- shire coalfield), Shropshire and Worces- tershire	100·7	40	49	111	99	103	103	141	149
Leicester, Warwickshire and the South Derbyshire coalfield	81·3	66	88	89	82	74	82	67	95
Glamorganshire	106·7	137	110	96	94	109	113	92	104
Monmouthshire	98·4	92	120	98	108	92	96	78	103
Brecknockshire, Carmarthenshire and Pembrokeshire	121·0	127	151	140	114	99	128	152	116
Cumberland	102·3	435	110	156	110	128	71	87	98
Gloucestershire and Somersetshire... ..	87·1	67	58	68	79	96	93	129	103

Other Workers below Ground, not Superintending Staff (043–047).

England and Wales	100·0	100	100	100	100	100	100	100	100
Northumberland	91·9	109	72	121	95	96	81	97	98
Durham	91·9	102	95	109	91	90	88	102	136
Cheshire and Lancashire	104·5	95	98	93	98	109	109	95	80
Yorkshire, West Riding	95·4	100	115	97	89	90	99	107	77
Nottinghamshire	107·3	103	87	110	94	122	105	122	150
Derbyshire, excluding the South Derby- shire coalfield	92·0	89	111	96	112	104	70	124	77
The North Staffordshire coalfield	84·8	47	128	83	87	55	99	73	55
Staffordshire (excluding the North Stafford- shire coalfield), Shropshire and Worces- tershire	81·8	128	86	71	59	90	89	54	80
Leicestershire, Warwickshire and the South Derbyshire coalfield	62·2	69	105	68	31	69	63	80	109
Glamorganshire	124·9	158	117	109	123	123	134	106	85
Monmouthshire	97·1	221	95	70	99	95	107	87	84
Brecknockshire, Carmarthenshire and Pembrokeshire	99·8	183	58	105	152	74	99	83	82
Cumberland	112·0	94	97	197	125	93	94	95	83
Gloucestershire and Somersetshire... ..	69·2	21	41	65	68	45	93	133	63

Workers above Ground, not Superintending Staff (049).

England and Wales	100·0	100	100	100	100	100	100	100	100
Durham and Northumberland	158·3	125	145	160	148	162	163	139	133
Cheshire and Lancashire	113·5	90	110	77	139	110	117	119	95
Yorkshire, West Riding	91·9	113	78	89	79	94	100	106	104
Derbyshire and Nottinghamshire, exclud- ing the South Derbyshire coalfield	74·8	78	79	101	77	66	70	72	118
Staffordshire, Worcestershire, Warwick- shire, Shropshire, Leicestershire and the South Derbyshire coalfield	83·7	87	88	98	67	93	80	90	105
Glamorganshire, Monmouthshire, Carmar- thenshire, Brecknockshire and Pem- brokeshire	105·9	93	89	86	113	112	108	112	82

TABLE 10.—Standardized Mortality (C.M.F.) of Coal Mine Heavers and Getters, aged 20–65 years, in various parts of the Country from certain selected Causes, 1921–23.

	England and Wales.	Northumberland.	Durham.	Cheshire and Lancashire.	Yorkshire, West Riding.	Nottinghamshire.	Derbyshire, excluding the South Derbyshire Coalfield.	North Staffordshire Coalfield.	Staffordshire (excluding North Staffordshire Coalfield), Shropshire and Worcestershire.	Leicestershire, Warwickshire, and the South Derbyshire Coalfield.	Glamorganshire.	Monmouthshire.	Brecknockshire, Carmarthenshire, and Pembrokeshire.	Cumberland.	Gloucestershire and Somersetshire.
All Causes	938	830	824	1,109	975	831	776	1,015	945	763	1,001	923	1,135	960	817
Influenza	40.1	55.3	46.8	35.0	32.3	21.1	15.2	30.4	54.0	44.1	49.3	62.4	42.9	48.8	64.7
Tuberculosis (all forms)	123.7	109.1	94.2	173.3	148.5	102.1	81.6	115.7	110.7	93.0	123.5	111.3	213.0	50.3	85.2
Respiratory tuberculosis	112.2	98.9	85.5	165.1	135.9	95.3	68.9	101.3	102.3	85.7	112.1	92.5	191.1	44.5	62.3
Syphilis, &c.	24.1	26.2	23.9	22.8	24.6	30.1	26.5	25.5	17.4	21.5	31.3	18.9	15.8	13.3	2.8
Cancer (all sites)	105.6	126.7	94.9	119.9	103.9	97.1	87.1	127.4	126.1	116.9	94.8	105.5	88.1	113.6	63.6
Cancer of the stomach	34.9	40.3	36.2	41.9	32.6	19.4	27.2	35.7	34.1	46.1	32.3	44.8	25.1	69.5	14.2
Diabetes	5.6	4.7	7.1	3.2	7.2	3.6	6.4	—	10.2	6.7	3.7	6.7	11.3	14.0	10.3
Cerebral hæmorrhage, &c.	43.6	19.7	49.5	54.4	50.7	34.9	31.2	37.4	36.0	19.5	53.2	27.6	63.2	50.5	16.1
Diseases of the circulatory system	126.6	91.7	119.2	153.6	133.7	112.8	105.8	168.9	90.5	101.8	141.5	95.8	113.9	146.9	179.4
Diseases of the heart	107.3	79.7	98.4	115.1	112.8	90.7	89.9	148.2	83.3	87.5	128.0	89.3	114.0	130.7	165.8
Valvular disease of heart	55.8	56.0	54.5	63.7	63.9	34.9	44.6	94.2	35.7	39.1	58.2	48.1	65.9	37.6	73.9
Other heart disease	51.5	23.7	43.9	51.4	48.9	55.8	45.3	54.0	47.6	48.4	69.8	41.2	48.1	93.1	91.9
Diseases of the respiratory system	173.9	138.7	119.5	227.3	171.5	133.7	144.2	190.2	218.0	108.9	203.4	191.4	307.2	111.9	145.7
Bronchitis	70.7	47.6	38.8	98.6	58.8	53.5	65.0	66.6	89.3	33.8	101.6	62.0	139.3	48.2	66.2
Pneumonia	83.2	73.4	71.7	109.4	94.2	62.3	60.3	113.1	118.5	62.4	77.2	88.6	115.2	42.4	34.4
Diseases of the digestive system	46.1	29.2	37.3	55.5	45.6	45.4	47.1	41.8	38.9	42.8	50.9	52.2	50.7	24.2	34.9
Peptic ulcer	11.7	11.7	12.5	9.5	9.2	15.3	10.8	4.8	16.1	7.7	13.8	18.9	23.3	5.1	9.3
Appendicitis	7.2	2.9	5.3	6.4	11.3	11.5	7.0	1.5	1.4	9.5	5.8	6.6	17.1	5.1	6.9
Cirrhosis of liver	5.0	—	3.5	7.1	4.2	2.6	—	19.8	—	6.3	4.6	6.5	—	—	—
Chronic nephritis	23.6	25.8	23.5	26.3	28.3	18.8	19.4	30.2	28.3	15.7	24.4	15.9	11.3	13.1	32.4
Suicide	21.1	22.5	16.9	34.8	24.4	30.5	13.7	27.1	20.3	19.4	11.7	11.6	12.4	36.4	22.0
Accident	102.6	95.7	96.3	93.4	108.1	96.1	96.2	122.9	103.3	77.3	106.4	100.2	96.8	249.1	93.5

TABLE 11 —Standardized Mortality (C.M.F.) of Coal Mine Hewers and Getters, aged 20–65 years, in various parts of the Country from certain selected Causes, compared with that of the same Occupation in England and Wales taken as 1,000, 1921–23.

	England and Wales.	Northumberland.	Durham.	Cheshire and Lancashire.	Yorkshire, West Riding.	Nottinghamshire.	Derbyshire, excluding the South Derbyshire Coalfield.	North Staffordshire Coalfield.	Staffordshire (excluding North Staffordshire Coalfield), Shropshire and Worcestershire.	Leicestershire, Warwickshire, and the South Derbyshire Coalfield.	Glamorganshire.	Monmouthshire.	Brecknockshire, Carmarthenshire, and Pembrokeshire.	Cumberland.	Gloucestershire and Somersetshire.
All Causes	1,000	885	878	1,182	1,039	886	827	1,082	1,007	813	1,067	984	1,210	1,023	871
Influenza	1,000	1,379	1,167	873	805	526	379	758	1,347	1,100	1,229	1,556	1,070	1,217	1,613
Tuberculosis (all forms)	1,000	882	762	1,401	1,200	825	660	935	895	752	998	900	1,722	407	689
Respiratory tuberculosis	1,000	881	762	1,471	1,211	849	614	903	912	764	999	824	1,703	397	555
Syphilis, &c.	1,000	1,087	992	946	1,021	1,249	1,100	1,058	722	892	1,299	784	656	552	116
Cancer (all sites)	1,000	1,200	899	1,135	984	920	825	1,206	1,194	1,107	898	999	834	1,076	602
Cancer of the stomach	1,000	1,155	1,037	1,201	934	556	779	1,023	977	1,321	926	1,284	719	1,991	407
Diabetes	1,000	839	1,268	571	1,286	643	1,143	—	1,821	1,196	661	1,196	2,018	2,500	1,839
Cerebral hæmorrhage, &c.	1,000	452	1,135	1,248	1,163	800	716	858	826	447	1,220	633	1,450	1,158	369
Diseases of the circulatory system	1,000	724	942	1,213	1,056	891	836	1,334	715	804	1,118	757	900	1,160	1,417
Diseases of the heart	1,000	743	917	1,073	1,051	845	838	1,381	776	815	1,193	832	1,062	1,218	1,545
Valvular disease of heart	1,000	1,004	977	1,142	1,145	625	799	1,688	640	701	1,043	862	1,181	674	1,324
Other heart disease	1,000	460	852	998	950	1,083	880	1,049	924	940	1,355	800	934	1,808	1,784
Diseases of the respiratory system	1,000	798	687	1,307	986	769	829	1,094	1,254	626	1,170	1,101	1,767	643	838
Bronchitis	1,000	673	549	1,395	832	757	919	942	1,263	478	1,437	877	1,970	682	936
Pneumonia	1,000	882	862	1,315	1,132	749	725	1,359	1,424	750	928	1,065	1,385	510	413
Diseases of the digestive system	1,000	633	809	1,204	989	985	1,022	907	844	928	1,104	1,132	1,100	525	757
Peptic ulcer	1,000	1,000	1,068	812	786	1,308	923	410	1,376	658	1,179	1,615	1,991	436	795
Appendicitis	1,000	403	736	889	1,569	1,597	972	208	194	1,319	806	917	2,375	708	958
Cirrhosis of liver	1,000	—	700	1,420	840	520	—	3,960	—	1,260	920	1,300	—	—	—
Chronic nephritis	1,000	1,093	996	1,114	1,199	797	822	1,280	1,199	665	1,034	674	479	555	1,373
Suicide	1,000	1,066	801	1,649	1,156	1,445	649	1,284	962	919	555	550	588	1,725	1,043
Accident...	1,000	932	939	910	1,054	937	938	1,198	1,007	753	1,037	977	943	2,428	911

TABLE 12.—Standardized Mortality (C.M.F.) of Coal Mine Underground Workers, not Hevers or Superintending Staff, aged 20-65 years, in various parts of the Country from certain selected Causes, 1921-23.

	England and Wales.	Northumberland.	Durham.	Cheshire and Lancashire.	Yorkshire, West Riding.	Nottinghamshire.	Derbyshire, excluding the South Derbyshire Coalfield.	North Staffordshire Coalfield.	Staffordshire (excluding the North Staffordshire Coalfield), Shropshire and Worcestershire.	Leicestershire, Warwickshire, and the South Derbyshire Coalfield.	Glamorganshire.	Monmouthshire.	Brecknockshire, Carmarthenshire, and Pembrokeshire.	Cumberland.	Gloucestershire and Somersetshire.
All Causes	1,203	1,106	1,106	1,257	1,148	1,291	1,107	1,020	984	748	1,503	1,168	1,200	1,347	832
Influenza	58.2	59.6	58.2	63.6	55.6	31.6	33.4	54.2	88.6	42.4	73.0	36.4	72.9	19.5	18.7
Tuberculosis (all forms)	151.4	177.8	162.8	150.7	146.5	183.6	151.3	149.2	84.7	131.9	155.1	115.4	152.7	121.3	111.4
Respiratory tuberculosis	138.5	161.3	141.2	140.8	137.2	143.6	139.3	142.7	78.7	131.9	149.2	112.8	115.6	121.3	103.3
Syphilis, &c.	23.4	30.8	19.4	23.8	11.7	27.9	9.3	9.6	16.7	—	34.5	27.7	19.4	25.9	14.6
Cancer (all sites)	126.1	123.5	108.3	112.1	129.8	172.7	123.5	173.1	164.4	119.0	148.9	112.8	94.7	160.3	100.4
Cancer of the stomach	40.5	45.2	39.5	38.2	37.6	36.1	30.4	82.5	26.3	21.2	48.5	22.0	55.3	75.1	31.0
Diabetes	10.4	9.5	13.4	5.9	11.7	19.3	8.0	—	8.9	4.5	10.2	11.1	7.4	—	15.5
Cerebral hæmorrhage, &c.	55.1	56.5	57.6	51.7	50.3	56.1	39.9	36.2	34.1	21.2	83.7	75.3	32.0	24.9	15.5
Diseases of the circulatory system	167.7	138.4	144.0	170.7	151.5	190.0	144.0	211.8	91.0	107.0	205.5	199.4	233.5	210.0	204.5
Diseases of the heart	144.2	129.5	121.0	143.0	131.6	172.2	124.0	184.5	65.9	107.0	181.4	159.5	198.4	185.2	173.4
Valvular disease of heart	78.0	72.8	76.6	77.0	85.1	109.7	54.8	120.3	26.3	32.6	80.8	74.4	92.9	84.7	73.0
Other heart disease	66.2	56.7	44.4	66.0	46.5	62.5	69.2	64.2	39.6	74.4	100.6	85.1	105.5	100.5	100.4
Diseases of the respiratory system	205.8	110.5	192.5	250.0	202.2	257.6	169.7	185.3	182.4	123.5	254.5	168.4	187.3	154.4	200.8
Bronchitis	77.4	31.1	71.9	106.8	63.5	108.7	44.0	80.8	60.1	32.6	105.6	66.2	74.3	75.1	30.1
Pneumonia	101.8	95.8	92.0	131.1	129.7	92.8	101.6	104.6	104.1	59.8	114.3	80.4	58.6	28.0	82.5
Diseases of the digestive system	65.1	70.3	63.5	67.5	52.2	21.9	64.0	78.8	53.3	42.5	68.4	108.5	19.4	126.2	15.5
Peptic ulcer	14.6	15.3	18.0	13.0	14.1	—	12.0	18.5	25.8	8.5	14.8	22.1	10.1	—	—
Appendicitis	7.5	4.9	5.5	11.4	2.6	3.6	18.7	18.7	9.3	—	8.1	5.8	—	51.6	—
Cirrhosis of liver	7.3	2.6	6.4	5.3	11.2	—	8.0	9.0	—	—	6.3	19.5	—	—	—
Chronic nephritis	29.4	29.6	28.7	39.5	25.9	8.2	39.9	31.1	20.7	—	35.4	13.2	11.8	25.4	31.8
Suicide	21.5	31.4	18.6	15.8	29.3	29.4	37.4	9.0	17.4	4.5	23.3	14.1	38.0	—	28.8
Accident	168.2	105.0	117.4	158.6	172.5	154.2	145.5	—	136.1	71.1	268.7	180.5	243.4	395.4	30.1

TABLE 13—Standardized Mortality (C.M.F.) of Coal Mine Underground Workers, not Hevers or Superintending Staff, aged 20–65 years, in various parts of the Country from certain selected Causes, compared with that of the same Occupation in England and Wales taken as 1,000, 1921–23.

	England and Wales.	Northumberland.	Durham.	Cheshire and Lancashire.	Yorkshire, West Riding.	Nottinghamshire.	Derbyshire, excluding the South Derbyshire Coalfield.	North Staffordshire Coalfield.	Staffordshire (excluding the North Staffordshire Coalfield), Shropshire and Worcestershire.	Leicestershire, Warwickshire, and the South Derbyshire Coalfield.	Glamorganshire.	Monmouthshire.	Brecknockshire, Carmarthenshire, and Pembrokeshire.	Cumberland.	Gloucestershire and Somersetshire.
All Causes	1,000	919	919	1,045	954	1,073	920	848	818	622	1,249	971	998	1,120	692
Influenza	1,000	1,024	1,000	1,093	955	543	574	931	1,522	729	1,254	625	1,253	335	321
Tuberculosis (all forms)	1,000	1,174	1,075	995	968	1,213	999	985	559	871	1,024	762	1,009	801	736
Respiratory tuberculosis	1,000	1,165	1,019	1,017	991	1,037	1,006	1,030	568	952	1,077	814	835	876	746
Syphilis, &c.	1,000	1,316	829	1,017	500	1,192	397	410	714	—	1,474	1,184	829	1,107	624
Cancer (all sites)	1,000	1,019	859	889	1,029	1,370	979	1,373	1,304	944	1,181	895	751	1,271	796
Cancer of the stomach	1,000	1,116	975	943	928	891	751	2,037	649	523	1,198	543	1,365	1,854	765
Diabetes	1,000	913	1,288	567	1,125	1,856	769	—	856	433	981	1,067	712	—	1,490
Cerebral hæmorrhage, &c.	1,000	1,025	1,045	938	913	1,018	724	657	619	385	1,519	1,367	581	452	281
Diseases of the circulatory system	1,000	825	859	1,018	903	1,133	859	1,263	543	638	1,225	1,189	1,392	1,252	1,219
Diseases of the heart	1,000	898	839	992	913	1,194	860	1,279	457	742	1,258	1,106	1,376	1,284	1,202
Valvular disease of heart	1,000	933	982	987	1,091	1,406	703	1,542	337	418	1,036	954	1,191	1,086	936
Other heart disease	1,000	856	671	997	702	944	1,045	970	598	1,124	1,520	1,285	1,594	1,518	1,517
Diseases of the respiratory system	1,000	537	935	1,215	983	1,252	825	900	886	600	1,237	818	910	750	976
Bronchitis	1,000	402	929	1,380	820	1,404	568	1,044	776	421	1,364	855	960	970	389
Pneumonia	1,000	941	904	1,288	1,274	912	998	1,028	1,023	587	1,123	790	576	275	810
Diseases of the digestive system	1,000	1,080	975	1,037	802	336	983	1,210	819	653	1,051	1,667	298	1,939	238
Peptic ulcer	1,000	1,048	1,233	890	966	—	822	1,267	1,767	582	1,014	1,514	692	—	—
Appendicitis	1,000	653	733	1,520	347	480	2,493	2,493	1,240	—	1,080	773	—	6,880	—
Cirrhosis of liver	1,000	356	877	726	1,534	—	1,096	1,233	—	—	863	2,671	—	—	—
Chronic nephritis	1,000	1,007	976	1,344	881	279	1,357	1,058	704	—	1,204	449	401	864	1,082
Suicide	1,000	1,460	865	735	1,363	1,367	1,740	419	809	209	1,084	656	1,767	—	1,340
Accident	1,000	624	698	943	1,026	917	865	—	809	423	1,598	1,073	1,447	2,351	179

TABLE 14.—Standardized Mortality (C.M.F.) of Coal Mine Workers above Ground, not Superintending Staff, aged 20–65 years, in various parts of the Country from certain selected Causes, and Comparison with that of the same Occupation in England and Wales taken as 1,000, 1921–23.

C.M.F.										Ratio.				
	England and Wales.	Durham and Northumberland.	Cheshire and Lancashire.	Yorkshire, West Riding.	Derbyshire and Nottingham-hamshire, excluding the South Derbyshire Coal-field.	Staffordshire, Worcestershire, Warwickshire, Shropshire, Leicester-shire and the South Derbyshire Coalfield.	Glamorganshire, Monmouthshire, Carmar-thenshire, Pembroke-shire and Brecknockshire.	England and Wales.	Durham and Northumberland.	Cheshire and Lancashire.	Yorkshire, West Riding.	Derbyshire and Nottingham-hamshire, excluding the South Derbyshire Coal-field.	Staffordshire, Worcestershire, Warwickshire, Leicester-shire, and the South Derbyshire Coalfield.	Glamorganshire, Monmouthshire, Carmar-thenshire, Pembroke-shire and Brecknockshire.
All Causes	1,183	1,873	1,343	1,087	885	990	1,253	1,000	1,583	1,135	919	748	837	1,059
Influenza	62·5	116·2	87·7	55·0	18·8	54·1	65·0	1,000	1,859	1,403	880	301	866	1,040
Tuberculosis (all forms)	183·2	283·8	200·4	148·5	128·9	178·1	189·4	1,000	1,549	1,094	811	704	972	1,034
Respiratory tuberculosis	159·9	230·3	185·0	137·1	120·4	153·0	168·6	1,000	1,440	1,157	857	753	957	1,054
Syphilis, &c.	25·0	52·6	14·0	10·8	22·8	17·3	34·9	1,000	2,104	560	432	912	692	1,396
Cancer (all sites)	113·2	180·0	108·9	105·7	105·6	109·6	106·6	1,000	1,590	962	934	933	968	942
Cancer of the stomach	31·8	55·0	24·8	22·0	32·1	23·7	35·3	1,000	1,730	780	692	1,009	745	1,110
Diabetes	9·6	15·6	14·9	5·8	6·2	9·5	7·9	1,000	1,625	1,552	604	646	990	823
Cerebral hæmorrhage, &c.	62·9	113·0	58·0	82·1	33·6	33·1	67·9	1,000	1,797	922	1,305	534	526	1,079
Diseases of the circulatory system...	197·9	395·8	230·1	158·5	119·3	168·0	185·5	1,000	2,000	1,163	801	603	849	937
Diseases of the heart	175·4	351·2	180·3	139·5	105·3	158·1	165·7	1,000	2,002	1,028	795	600	901	945
Valvular disease of heart	103·8	232·2	120·8	90·9	53·2	79·8	80·9	1,000	2,237	1,164	876	513	769	779
Other heart disease	71·6	119·0	59·5	48·6	52·1	78·3	84·8	1,000	1,662	831	679	728	1,094	1,184
Diseases of the respiratory system...	218·0	331·9	252·3	219·1	182·1	148·1	241·3	1,000	1,522	1,157	1,005	835	679	1,107
Bronchitis	88·5	113·9	120·3	97·1	87·3	55·4	105·8	1,000	1,287	1,359	1,097	986	626	1,195
Pneumonia	103·4	156·8	122·9	108·5	77·6	83·2	101·6	1,000	1,516	1,189	1,049	750	805	983
Diseases of the digestive system	54·7	64·0	96·3	43·9	57·8	57·1	41·1	1,000	1,170	1,761	803	1,057	1,044	751
Peptic ulcer	13·5	13·4	26·2	8·9	24·2	19·6	5·9	1,000	993	1,941	659	1,793	1,452	437
Appendicitis	5·7	8·3	4·5	5·9	3·2	4·0	—	1,000	1,456	789	1,035	561	702	—
Cirrhosis of liver	7·0	11·3	8·1	7·8	7·8	—	9·7	1,000	1,614	1,157	1,114	1,114	—	1,386
Chronic nephritis	33·7	64·1	28·9	36·6	21·3	20·1	33·7	1,000	1,902	858	1,086	632	—	1,000
Suicide	19·3	21·7	27·2	21·9	11·9	11·2	27·9	1,000	1,124	1,409	1,135	617	—	1,446
Accident	70·7	56·9	71·9	83·3	48·2	49·5	113·4	1,000	805	1,017	1,178	682	—	1,601

Though these tables are inserted for reference, not for comment, one or two points may be noted. High phthisis mortality for hewers and getters in West Wales and Lancs. is not accompanied by a high rate for other underground workers in the same fields. Of course, it is possible that local practice in the treatment of invalids may vary, the phthisical hewer being given lighter work in some fields which would decide his occupational description at death, whereas in these two fields this practice may not prevail. There is no such phthisis excess in any field for others underground as in the two mentioned for hewers. Respiratory disease is highest for hewers in West Wales, Lancs. and Staffs. (not North), and for others underground in Notts., Glamorgan and Lancs., but in West Wales, where the hewers excess is 77 per cent., this rate is below average by 9 per cent. for others underground. Mortality from suicide is in high excess for hewers in Cumberland and Lancashire, but low for others underground in the same two counties. The high mortality from accident both of hewers and others in Cumberland was due to exceptional circumstances, and must not be regarded as characteristic of that field.

Table 14 shows that the geographical distribution of the mortality of workers above ground noted in Table 9 applies to most of the chief causes of death considered separately, *e.g.*, phthisis, respiratory disease, and so far as the northern excess is concerned, cancer.

12. *Iron Miners* (underground, other than superintending staff) return a mortality at 20–65 less by 4·6 per cent. than the general average (Table B), so their record is definitely more favourable than that of coal miners (3·4 per cent. excess). Advantage, as compared with the general average, applies almost entirely to ages 35–65, younger and older men recording excess, which rises to 30 per cent. at 70 and over. This excess in later life is carried further than with coal miners. The only causes for which iron miners return important excess are influenza (175, 2085), and accident (168, 1992), both of which are also specially fatal to coal miners.

Table 15 compares the mortality of miners in two composite areas, (1) Cumberland and Lancashire and (2) Staffordshire and the North Riding (*see* pages 112 and 113). The latter two areas, though not continuous, have the common feature of dry conditions of working, and they have been tabulated in distinction to the former two, where wet conditions prevail, at the instance of the Mines Department. It will be seen that mortality is a little above average in the wet mine counties, and much below it in the dry. It is higher in the former than the latter at every age from 20 to 70, and, as pointed out on page xi, little stress can be laid on the appearance of approximate equality at ages over 70.

Table 16 shows that the causes of death chiefly accounting for the Cumberland and Lancashire excess are tuberculosis (especially non-respiratory) and respiratory disease, cerebral hæmorrhage, and Bright's disease, whereas for cancer and heart disease their rates are much lower. Jointly the former causes record a C.M.F. of 484·9 in the counties with wet conditions, as against 265·5 in those with dry. The accident rate is also considerably higher in the former case.

TABLE 15.—*Mortality at Various Ages of Iron Ore Mine Underground Workers, not Superintending Staff, in different parts of the Country, as compared with that of all Occupied and Retired Civilian Males taken as 100 in each case, 1921–23.*

—	Ages 20–65. (C.M.F.)	16–	20–	25–	35–	45–	55–	65–	70 and over.
Iron Ore Mine—Underground Workers, not Superintending Staff :—									
England and Wales	95·4	87	111	115	90	97	89	116	130
Cumberland and Lancashire	103·1	46	151	119	91	113	90	126	154
Staffordshire and Yorkshire (North Riding)	79·2	94	89	90	80	67	83	114	157

13. *Tin and Copper Miners* are found exclusively in Cornwall. Their mortality is excessive, their C.M.F. from all causes being $3\frac{1}{4}$, and, for underground workers, $4\frac{1}{2}$ times the average. But it should be noted that the Cornish mining industry was in an extremely depressed condition in 1921, as evidenced by reduction of the numbers so employed from 7,404 in 1911 to 3,046 in 1921. Cornish miners have for many years been migratory in habit to an outstanding degree, coming and going, especially between the Transvaal and home, as demand for their labour attracts them. It is probable therefore that in 1921 most of the able-bodied men who could do so had secured mining work elsewhere, or even,

TABLE 16.—*Standardized Mortality (C.M.F.) of Iron Ore Mine Underground Workers, not Superintending Staff, at ages 20–65 years, from certain selected Causes, and Comparison with that of all Occupied and Retired Civilian Males taken as 1,000, 1921–23 (see page lrv).*

	England and Wales.		Cumberland and Lancashire.		Staffordshire and Yorkshire (North Riding.)	
	C.M.F.	Ratio.	C.M.F.	Ratio.	C.M.F.	Ratio.
All causes	954	954	1,031	1,031	792	792
Influenza	75·9	2,085	74·4	2,044	92·1	2,530
Tuberculosis (all forms)	158·2	892	220·9	1,246	103·7	585
Tuberculosis of the respiratory system	133·2	815	174·9	1,070	91·5	560
Syphilis, &c.	3·8	140	—	—	8·0	295
Cancer (all sites)	108·9	848	57·7	449	118·7	924
Cancer of the stomach	29·9	1,014	18·6	631	35·9	1,217
Diabetes	8·7	713	13·9	1,139	6·2	508
Cerebral hæmorrhage	43·7	973	62·7	1,396	32·2	717
Diseases of the circulatory system	110·6	727	71·4	469	136·5	897
Diseases of the heart	75·9	588	51·3	398	92·6	718
Valvular disease of heart	49·2	776	42·6	672	41·0	647
Other heart disease	26·7	407	8·7	133	51·6	787
Diseases of the respiratory system	141·6	933	173·7	1,145	121·6	802
Bronchitis	33·8	681	50·0	1,008	22·9	462
Pneumonia	61·8	726	63·6	747	68·8	808
Diseases of the digestive system	51·6	867	40·8	686	24·5	412
Peptic ulcer	9·8	620	8·7	551	6·0	380
Appendicitis	11·9	1,337	15·1	1,697	6·2	697
Cirrhosis of liver	3·0	313	—	—	—	—
Chronic nephritis	15·0	435	27·6	800	8·0	232
Suicide	21·2	872	26·3	1,082	—	—
Accident	98·2	1,992	99·4	2,016	66·2	1,343

if they were unable to do that, other work at home, leaving assignable to this employment only the greatly reduced number of more or less fit men still so employed in 1921, whose death-rate may have been far below that recorded on page 12, together with a proportionately large number of invalids unfit for employment, whose high mortality has inflated the rates for these workers to the figures there tabulated. Moreover, this effect may well have been increased by the death at home of men stricken with disease in South Africa.

The excess for underground workers is greater than for any other occupation dealt with. It is greatest in middle life, the rates for underground workers being over four times average at all ages 35–65. At 35–45 the excess reaches the terrible extent of 450 per cent., and in later life it remains very high, 149 per cent. at 70 and over. At ages under 25 their experience is very favourable, as far as the small numbers concerned permit it to be estimated, so it would seem that the class of recruit entering the occupation is good, and in no way accounts for their later mortality. Table D shows that almost all the causes there distinguished contribute to this excess of mortality, but chiefly tuberculosis and respiratory diseases. The phthisis death-rate is $12\frac{1}{2}$ times the normal, and that from respiratory diseases 6·3 times. The bronchitis rate is 5 times the average, but that from pneumonia (broncho- and lobar) rather below it. Only 3 deaths were ascribed to this disease, but 27 (out of 525 in the whole population) to chronic interstitial pneumonia (*see* page xl). At 55–65 their death-rate from this cause was 1,675 per 100,000, or about 420 times the average for all occupations (*see* page 13). This may partly explain the low rate from ordinary pneumonia, the frequency of silicosis in these workers leading to the return under this heading of deaths which in other occupations would be ascribed to “pneumonia.” But if the view is correct that phthisical patients rarely suffer from non-tuberculous lobar pneumonia, this may help to explain the lowness of the pneumonia rate. In any case, no other occupation in this country suffers to anything like the same extent from silicosis, or illustrates like these men the liability of this condition to lead to tuberculosis. The 912,126 coal miners (groups 7–11) suffered 60 deaths from chronic interstitial pneumonia, and the 2,110 underground tin miners 27 from the same cause. Their mortality was more than three times the average also from diabetes, cerebral hæmorrhage, chronic nephritis, myocardial disease, and suicide. Even cancer, which might not be thought likely to show any connexion with the special risk of tin mining, is in greater excess

88·5 per cent.) for this occupation than for any other except waiters (100·3) and cutlery grinders (93·8 per cent.). The latter occupation resembles tin miners in returning excessive, though not nearly so excessive, mortality from chronic interstitial pneumonia. Table F shows that underground workers in tin and copper mines suffer higher mortality than any other occupation (position 178), under no less than nine out of the twenty-three headings distinguished. These are, all causes, tuberculosis, phthisis, cerebral hæmorrhage, circulatory disease, heart disease, non-valvular heart disease, respiratory disease, and suicide. But to all these excesses the caution as to the doubtful applicability of the deaths to the population remaining in the industry applies.

14, 15. *Stone and Slate Miners and Quarriers*, on the other hand, show mortality slightly below average, and not excessive at any age, though tending to rise relatively in later life. Both, as might be expected, return a high rate from accident (172, 2,241, and 167, 1,961), and slate quarriers from respiratory tuberculosis (145, 1,594).

At the instance of the Department of Mines the mortality data for stone miners and quarriers have been taken out separately for certain counties (*see* pages 113 and 114), selected by the type of stone worked, and Table 17 compares the total mortality at each age of men working chiefly igneous rock (not granite), limestone, and sandstone.

TABLE 17.—*Mortality at various Ages of Miners and Quarriers of different kinds of Stone (represented by those working in certain selected counties—see pages 113 and 114) as compared with that of all Occupied and Retired Civilian Males taken as 100 in each case, 1921–23.*

—	Ages 20–65. (C.M.F.)	16–	20–	25–	35–	45–	55–	65–	70 and over.
All Stone Miners and Quarriers	94·6	100	108	90	101	84	99	108	123
Miners and Quarriers of Igneous Rock (not Granite)	57·3	—	79	36	91	57	46	98	125
Limestone Miners and Quarriers	91·8	149	139	102	93	93	82	88	121
Sandstone Miners and Quarriers	164·4	99	104	202	146	132	193	224	150

Mortality ranges in the order named from 57·3 per cent. of average for workers in igneous rock to 164·4 per cent. for workers in sandstone. The same order applies at every age from 25 to 65, and at all ages over 25 the rate for sandstone workers is much the highest of the three. But, although the C.M.F. for the latter exceeds the average by 64 per cent., that for stone quarrymen as a whole is more than 5 per cent. below average. This is due in part to the favourable figure for the selected limestone workers, who formed 37·3 per cent. of all stone miners and quarriers enumerated, but particularly to the exceptionally low rate of 57·3 for workers in igneous rock, which is lower than for any occupation dealt with except farm bailiffs (526) and Anglican clergy (561). These men form 12·9 per cent. of the whole, those working in the sandstone counties being 15·6 per cent., and those in unclassified counties 34·2 per cent. of the total stone miners and quarriers.

Table 17 demonstrates conclusively that quarrying is potentially a very healthy occupation, being so in fact where the nature of the stone is such as to give rise to no harmful dust, but that where siliceous dust is engendered it can be very unhealthy. Only eight of the 178 occupations yield a C.M.F. higher than 1,644.

Table 18 shows that mortality is below average for the igneous rock workers for every cause there dealt with except syphilis &c. (only three deaths), valvular disease of the heart, and accident. As it is probably safer to consider heart disease as a whole, we may say that with one insignificant exception all disease mortality rates are low for igneous rock workers. On the other hand all, except cancer, Bright's disease, cirrhosis of the liver, and cerebral hæmorrhage, are high for sandstone workers, their excesses from tuberculosis and respiratory disease being particularly great, as in other cases of special silica risk. But it has to be remembered, as in the similar case of sandstone masons (page lxxxii), that the counties taken as representative of sandstone working are all situated in the north of England, where total mortality from respiratory disease, though not from phthisis, is in great excess. (Statistical Review, 1925, Table XLVIII.) The sandstone quarrymen's pneumonia C.M.F. of 194·6 is exceeded by only three of the 178 occupations included in Table C. But their valvular heart disease C.M.F. of 157·8 (based on 19 deaths at 20–65) is higher than any recorded in Table C, in which the highest entry is that of 137·6 for cotton card and frame

tenters, cotton strippers and grinders (130·8) coming next. The nature of these two occupations is not such as to suggest that physical strain can explain the exceptional mortality from this cause of the sandstone quarrier, which is not, moreover, shared by those working in other rocks. But a similar variation of mortality by kind of rock applies to accident, though to the untechnical reader it is not obvious why this risk should vary like total mortality with the kind of stone, from 129 per cent. of average for igneous rock to 325 per cent. for sandstone. Possibly accident insurance may contribute to this by reason of the tendency it induces to ascribe to accident deaths which would otherwise be referred to disease.

TABLE 18.—*Standardized mortality (C.M.F.) of Miners and Quarriers of various kinds of Stone, aged 20–65 years, from certain selected Causes, and Comparison with that of all Occupied and Retired Civilian Males taken as 1,000.*

	All Stone Miners and Quarriers.		Miners and Quarriers of Igneous Rock (not Granite).		Limestone Miners and Quarriers.		Sandstone Miners and Quarriers.	
	C.M.F.	Ratio.	C.M.F.	Ratio.	C.M.F.	Ratio.	C.M.F.	Ratio.
All Causes	946	946	573	573	918	918	1,644	1,644
Influenza	37·3	1,025	34·4	945	41·2	1,132	44·1	1,212
Tuberculosis (all forms)	164·1	926	94·5	533	172·1	971	343·9	1,940
Tuberculosis of the respiratory system	155·2	949	94·5	578	163·7	1,001	312·0	1,908
Syphilis &c.	22·0	812	36·3	1,339	12·4	458	30·0	1,107
Cancer (all sites)	82·7	644	58·5	456	85·2	664	90·0	701
Cancer of the stomach	24·9	844	12·3	417	20·3	688	15·5	525
Diabetes	8·9	730	—	—	8·0	656	24·2	1,984
Cerebral hæmorrhage	39·0	869	11·0	245	40·7	906	36·0	802
Diseases of the circulatory system	142·5	936	82·8	544	121·2	796	296·4	1,947
Diseases of the heart	117·0	907	82·8	642	89·1	691	246·1	1,908
Valvular disease of heart	74·7	1,178	70·5	1,112	58·6	924	157·8	2,489
Other heart disease	42·3	645	12·3	187	30·5	465	88·3	1,346
Diseases of the respiratory system	155·2	1,023	49·9	329	132·5	873	367·5	2,423
Bronchitis	46·1	929	—	—	40·4	815	109·0	2,198
Pneumonia	85·0	999	25·9	304	79·7	937	194·6	2,287
Diseases of the digestive system	48·2	810	11·8	198	46·4	780	64·6	1,086
Peptic ulcer	13·5	854	—	—	8·6	544	32·4	2,051
Appendicitis	7·9	888	—	—	4·5	506	16·7	1,876
Cirrhosis of liver	—	—	—	—	—	—	—	—
Chronic nephritis	14·7	426	11·0	319	12·4	359	28·8	835
Suicide	19·8	815	11·0	453	12·9	531	46·0	1,893
Accident	110·5	2,241	63·6	1,290	127·7	2,590	160·1	3,247

16. *Cement Workers and Lime Burners* (for definition see page 14) return the low C.M.F. (all causes) of 717, a rate bettered by only 13 other occupations. At no period of life does their mortality equal average, and at most it is well below it. Table F shows that their comparative position varies greatly with cause. Besides being 14 for mortality from all causes it is 1 for cerebral hæmorrhage and appendicitis and 2 for myocardial and total heart and circulatory disease. But it is 153 for peptic ulcer, 157 for diabetes, and 161 for accident, with corresponding C.M.F. ratios of 1,646, 1,656, and 1,572 (Table D). This extreme variability is not accounted for by small numbers, as the group included 8,645 men.

17–22. *Makers of Bricks and Pottery*.—These six occupations comprise two which may be regarded as healthy, brick makers (53, 926) and brick and tile kiln and oven men (37, 878), and three which must be classed as very unhealthy, earthenware and china kiln and oven men (172, 1830), potters with their ancillary mill workers and slip makers (170, 1642), and pottery glazers, &c. (156, 1413), the sixth group of other miscellaneous workers in these products being of moderately high mortality (135, 1243). Brickmakers are of less than average mortality at all ages under 55, but later excess sets in which reaches a maximum of 46 per cent. at 70–. Potters &c. derive their high total rate chiefly from excess of mortality at 45–55 (71 per cent.) and 55–65 (91 per cent.), though their rate is above average at every age distinguished. The glazers and decorators form only a small body of men, about 2,500, but they represent also a much larger number of females (about 13,500), so that such light as the limited male experience available can throw upon the risk involved is of

importance. Their total excess mortality of 41·3 per cent. is chiefly met with at ages over 45, at each of which the ratio is higher than at any lower age. The greatest pottery excess is that of the china and earthenware kiln and oven men, who are subject both to lead risk from glaze, and silica risk from the flint dust with which the ware is packed in the "saggers" which these men handle and fire. Their total C.M.F. of 1,830 is the highest but six in Table E. The class of man recruited for the work appears to be good, as mortality is below average at all ages under 35, but from 35 to 70 it is continuously in great excess—about double the average. Brick tile, &c., kiln and oven men are not subject to either of the special risks affecting the corresponding workers in china ware, and their C.M.F. of 878 is the lowest in the brick and pottery group. Yet after 55 their mortality exceeds average, the excess increasing with age, though that of 70 per cent. at 70 and over is presumably largely a matter of age distribution (*see* page xi). There remains the large miscellaneous group of other workers, whose moderate excess mortality at 20–65 of 24·3 per cent. is contributed to by each age dealt with.

As to the causes accounting for these mortalities, Table F shows that a number of bad positions under phthisis and respiratory disease are associated with the exposure to silica involved. Some of these, with the corresponding C.M.F. ratios from Table D, are as follows:—

Potters: Phthisis 173, 2750; respiratory disease 173, 2856; bronchitis 176, 5435; pneumonia 132, 1242; and, in addition, valvular disease 164, 1498; cirrhosis of the liver 160, 2240; and Bright's disease 158, 1728.

Earthenware and china kiln and oven men: Phthisis 167, 2243; respiratory disease 175, 2935; bronchitis 174, 4895; pneumonia 160, 1659; also cancer 169, 1564; and Bright's disease 167, 2026.

Pottery glazers, &c., do not show the same excess of mortality from phthisis—138, 1462—or respiratory disease—110, 1096—but excesses under other causes may be associated with the high lead risk which is stated in Table 7 to have been the direct cause of seven deaths. These include circulatory disease (171, 1641); cerebral hæmorrhage (173, 2318), and Bright's disease (172, 2304). Their high mortality from cancer (166, 1519) is noteworthy in the light of the view that lead is a preventive of cancer, and the same association may be noted for the china kiln and oven men, whose lead exposure, evidenced by 17 deaths in Table 7, has not prevented the high cancer mortality above noted. Glazers suffer excessive mortality also from cirrhosis of the liver (171, 2750), but as some compensation for the risks involved their position was unique amongst the 178 groups in that they suffered no mortality from accident.

Both groups of workers in brickmaking return low rates from digestive diseases, brick-makers 18, 684 (no deaths from appendicitis or cirrhosis of the liver) and kiln and oven men 2, 334 (no deaths from cirrhosis of the liver). Brickmakers share to some extent the bronchitis risk of other kindred occupations, their position in Table F being 152 (ratio 1994).

23, 24. Skilled Glass Workers.—The reason for restriction of the scope of this and other similar headings to skilled men is lack of definitiveness and precision in the occupational description of the unskilled. If a man is described as a teaser or lamp-glass blower the nature of his work and in a general way the conditions under which it is carried out are known. He can be assumed, for instance, to be subjected to great heat. But if he is returned as a glass-works labourer, very little is known of the conditions of his work, which may be carried on in the open air or in the glasshouse. The three groups in which glass workers have been dealt with in the present report are meant to cover (1) all workers who can be assumed to be subject to the intense heat of the glasshouse—skilled glasshouse workers, group 23; (2) one special section of these men, glass blowers by the traditional method, *i.e.*, using the mouth and not a machine for the supply of air required, group 23A; and (3) other skilled glass workers, group 24, who may be seen from the Classification of Occupations, Census 1921, to be mainly workers in cold glass—engravers, cutters, bevellers, optical workers, &c.

Table B shows considerable excess of mortality for each of the three groups, 24·4 per cent. for glasshouse workers, 31·4 for blowers and finishers, and 41·7 for others. For all three mortality is low at 16–20, indicating that a good type of recruit is obtained for this trying work, and above the mean at every subsequent age, with large excess in later life both for blowers and other glasshouse workers.

The most remarkable fact brought out by Table F for these men is their exceptional mortality from diabetes. This was higher (178, 3795) for blowers and finishers than for any other occupation, and next to them for glasshouse workers generally (177, 3590), while the diabetes position for other glass workers is 171, 2574, other occupations with

higher diabetes mortality than the latter being tin and copper miners, total and underground, cotton blowroom workers, and publicans. The glasshouse diabetes deaths numbered 10, in a population of about 12,000, and six of these deaths were of blowers and finishers, so the other 5,000 (approximately) glasshouse workers, with four deaths, suffered much the same diabetes mortality (C.M.F. 37·9, ratio 3107) as the 7,000 blowers with six. The 9,429 other glass workers suffered five deaths from diabetes. In all cases the age chiefly affected was 55–65, at which 9 out of the total of 15 deaths for glass workers occurred. The remaining six deaths were distributed over the earlier ages, none occurring after 65. Corresponding excess was recorded in 1890–92, but not in 1900–02 or 1910–2 (see page xxxii).

Table F shows high positions for all three groups from phthisis (136–155), cancer, (147–165), respiratory disease (147–162), bronchitis (162–171), and suicide (154–167, ratio 1523–1716). The special liability of glasshouse workers to cancer of the skin is discussed on page xxix. The “other skilled” also suffer severely from chronic nephritis (157, 1632), and cerebral hæmorrhage (166, 1804), but glasshouse workers are not exceptionally affected.

25. *Chemical Workers* return a light mortality experience, with an all causes position in Tables E and F of 37. The corresponding C.M.F. ratio in Table B is 87·8, mortality being below average at all ages except 20–25. Only eight occupations return a lower rate at 70— (Table E), but the doubtful significance (page xi) of this rate has to be remembered. The worst positions recorded in Table F are for accident (144, 1262), appendicitis (143, 1506), and cancer (137, 1245).

“Manufacturing chemists” returned excess mortality from cancer of the skin in 1910–12 (Medical Research Council, Report No. 99, page 33), but not from cancer generally. In 1921–23 chemical workers experienced excess mortality both from cancer generally, as already noted, and from skin cancer, but in both cases this excess is limited to ages under 65, later mortality being very light. This peculiarity applies also to cancer of the œsophagus, stomach, and undistinguished sites, mortality from all of which is in large excess, generally speaking, at ages under 65, and light or absent at higher ages. If the mortality of retirement corresponded with that of working life for chemical workers, their cancer death-rate would be amongst the highest recorded. Table 7 shows that chemical workers suffered three deaths from lead poisoning, the deceased in each case having been employed in the red and white lead and litharge industry.

26. *Makers of Paint, Oil, Soap, Grease, &c.*—Mortality is very moderate (C.M.F. 918), and neither its distribution by age nor by cause calls for comment, except that three deaths occurred from lead poisoning, all of paint makers (Table 7).

27. *Iron and Steel Smelters, Rollers and Converters.*—This is a composite body of men, largely skilled, but including 53 per cent. of “other” (*i.e.*, unskilled) metal workers (Code No. 279) engaged in the processes connected with iron and steel manufacture. The work is heavy and involves trying changes of temperature. That it requires a good class of recruit may be inferred from the low mortality of the picked men entering it (Table B) —90 per cent. of average at 16–20, and 68 at 20–25. After this age mortality tends to be a little above average. This feature is greatly accentuated in the case of the puddlers, a small fraction of these workers (5,447 out of 86,702, or 6 per cent.), distinguished for the first time in 1921, and selected, as group 27A, for separate tabulation, as subject to special risk. In their case general mortality rises from 2·5 per cent. excess over normal for group 27 as a whole to 25 per cent. excess, and a mortality ratio of only 52 per cent. of average at 16–20 is succeeded by ratios of 141 to 174 per cent. at ages over 45. The chief risk is from respiratory disease, this form of mortality being 45 per cent. in excess for group 27 as a whole and 110 per cent. for puddlers (Table D). Rates are high for both bronchitis and pneumonia, and, for group 27 as a whole, from influenza, but not from phthisis. The C.M.F. of puddlers from respiratory disease, 319·1, is exceeded by only 12 out of the 178 occupation groups, and that of 173·4 from pneumonia by six (Table F).

Their bronchitis record (167, 2685), though showing larger excess than that for pneumonia (172, 2038) is seen really to be of less significance, because of the greater range of mortality from bronchitis (see page xl). An excess of 168·5 per cent. from bronchitis is exceeded by eleven occupations, but an excess of 103·8 per cent. from pneumonia by only six. The puddlers' cancer C.M.F. of 205·0 is exceeded by only eight other occupations, being almost as high as that of gas stokers (205·2), who share their heat exposure and are subject to tar risk in addition. At ages over 55 they suffer 4–7 times the average mortality from skin cancer, but the gas stokers' excess is much higher still (page xxix). Cancer mortality is also in some excess for group 27 as a whole (119, 1156) but not nearly so much so as for puddlers.

28. *Metal moulders* are a large body of men, 61,329 at 20–65, forming, with the 37,589 foundry labourers (Table A), almost the whole of the 104,001 foundry workers. Their mortality, from all causes jointly, exceeds the general average by 13·7 per cent., all ages except 20–25 (95 per cent.) contributing to the excess, which, increasing with age, reaches 34 per cent. for those over 70 (Table B). The causes of death particularly fatal to moulders are as follows:—Influenza (150, 1412), cancer (135, 1238), respiratory disease (151, 1665), bronchitis (140, 1724), pneumonia (162, 1709). The similarity of this list to that for blast furnace workers will be noted, but the excess mortality from skin cancer is small compared with that for puddlers.

29. *Iron Foundry Furnacemen and Labourers*.—Conditions of work must be much the same for these men as for moulders except for greater direct exposure to furnace heat. Their total mortality is slightly less, and it does not increase with age relatively to the general average as does that of moulders. This may be because the unskilled man is more likely to change his work and does not undergo the lifelong exposure of the moulder to foundry conditions. Mortality is high for influenza (166, 1788), respiratory disease (161, 1966), bronchitis (144, 1821), and pneumonia (174, 2270); and low, as with other unskilled workers, for diseases of the digestive system (11, 617). Cancer mortality is little more than average. The most conspicuous risk seems to be that from pneumonia, shared by other foundry workers (moulders 162, 1709), brass foundry furnace men, and labourers (178, 2492); compare also puddlers (172, 2038), and gas stokers (154, 1586). Mortality from skin cancer is not excessive.

30. *Brass Foundry Furnacemen and Labourers* are subject both to the heat risk of foundries in general and to the special risk associated with molten brass. Their C.M.F. for all causes of 1,530 is exceeded by only fourteen other occupations (Table E). At 16–20 their mortality is three times average, but afterwards its highest ratio is 202 per cent. at 35–45. Mortality after 65 is not high, and the explanation of instability of occupation suggested for the same feature in the case of iron foundry furnacemen, &c., may apply here also. The moulder (who in this case includes the “brass caster”), is a skilled man, who remains in the occupation, but the labourer is not, and probably changes his work if he finds it does not suit him. Brass moulders are included with other metal moulders in group 28, but their numbers (not separately recorded) are probably too small to affect its mortality much. Table D shows that brass furnacemen suffer exceptionally high mortality from most causes. The following high mortality positions are recorded in Table F:—Influenza, 177 (cutlery grinders alone returning a higher rate); phthisis, 164; cerebral hæmorrhage, 168; myocardial disease, 156; bronchitis, 151; pneumonia, 178 (*i.e.*, the highest mortality of the 178 occupation groups in this table); and digestive diseases, 152 (peptic ulcer 156, appendicitis 165, cirrhosis of the liver 150). The brass founder’s *ague*, from which these men suffer, and which is characterised by shivering, vomiting, and acute depression, may conceivably help to explain the high mortality from digestive disease. Their maximum rate from pneumonia may be due as well to the fumes of oxide of zinc to which the characteristic “*ague*” is attributed as well as to the conditions conducive to this disease shared with other foundry workers. Mortality from influenza, phthisis, pneumonia, respiratory disease in general, cerebral hæmorrhage, and appendicitis is shown by Table D to be over double the average, and that from bronchitis almost double.

31–34. *Smiths, Metal Machinists, Fitters, and Boilermakers and their Labourers* are all occupations of slightly less than average mortality, presenting no outstanding rates at any age, or from any cause.

35. *Brass Finishers and Turners*, though working with cold metal, present mortality features somewhat similar to those noted for the brass furnacemen. Their total mortality is 29·3 per cent. above the average, exceeding it at every age except 16–20, but chiefly at 35–55. The causes from which their mortality is highest from the point of view of Table F are—influenza, position 158, phthisis 163, cancer 159 (cancer of the stomach, 173), bronchitis 142, pneumonia 152, peptic ulcer 154, and cirrhosis of the liver 145. Thus their mortality from cancer of the stomach was exceeded by that of only five other occupations. The high cancer rate is not shared by brassfounders, but phthisis and respiratory and digestive diseases are notably high for workers in both hot and cold brass. Exposure to dust during processes of sand grinding and polishing may contribute to the respiratory disease of the latter.

36. *Coppersmiths* are not of high general mortality, exceeding average by 8·7 per cent., but they are specially subject to certain causes of death. Their phthisis mortality exceeds

average by 78 per cent, (Table D) being exceeded by that of only 25 other occupations (Table F). But the most characteristic feature of their mortality is an exceptionally high rate from two related causes, chronic nephritis and cerebral hæmorrhage, from each of which causes only four occupations return higher mortalities, the excesses for copper-smiths being 173 and 164 per cent. This may be due to lead risk (from soldering), although no death of a coppersmith from lead poisoning was registered in the three years. High mortality from Bright's disease was not recorded for copper workers in earlier reports, but deaths from lead poisoning have usually been reported.

37. *Cutlers* are mainly assemblers of manufactured parts into table and pocket knives, scissors, and other articles of cutlery, but they also do a certain amount of grinding and polishing, though the cutler's shop is always separated from the grinding room (Home Office Report on the Grinding of Metals, Macklin and Middleton, 1923). They are thus presumably subject in some degree to the silica dust risk so fatal to metal grinders, especially in the cutlery trade. Their C.M.F. from all causes is 28 per cent. above average, the excess falling mainly on ages 35–55. This moderate excess must not be compared with that of 63 per cent. recorded for 1910–12, or with earlier rates, as the heading "Cutler" at that time covered all processes in cutlery manufacture, and so included the grinders, whose exceptional risk is dealt with below. The worst positions occupied by cutlers in Table F are for phthisis 168, valvular heart disease 161, accident 159, and pneumonia 153. In each of these cases, except accident, the position of the grinders (group 40) is worse, so the cutler's association with grinding may largely explain these excesses. The largest excess is that of 125 per cent. from phthisis, pneumonia, 56 per cent., coming next. Mortality from digestive diseases, 16 per cent. of average, is the lowest recorded for any occupation (page xli).

38. *File Cutters*.—This small occupation (1,425 men aged 20–65, Table A) has long been separately distinguished in these reports on account of its high mortality. Its C.M.F. from all causes is now 85 per cent. in excess of average, and is exceeded by those of only five other occupations. In 1910–12, the excess was even greater, 94 per cent., though the men then dealt with as file makers included many not subject to the special risk of the actual file cutter. The population dealt with, 4,384 aged 20–65, was correspondingly larger. And, in addition to the change in classification, rapid change is believed to be in progress in the processes of manufacture, which would in any case account for large differences between the present and previous returns. It may be that reduction of risk arising in this way has sufficed to neutralize the increase in recorded mortality which might otherwise have been anticipated from better segregation of the men exposed to special risk. Large excess is continuous from age 25 onwards, though the rates below this age suggest that the health of those entering the occupation is normal. Table F shows that the mortality from most causes is amongst the highest for the 178 occupations. Some of these positions are as follows:—Chronic nephritis 178, cerebral hæmorrhage 175, appendicitis 175, influenza 174, valvular heart disease 174, bronchitis 172, and phthisis 171. Table D shows that mortality is at least double the average from nearly all these causes, and from diabetes as well, and more than six times average from chronic nephritis. It might have been expected that mortality from myocardial disease (which is rather low) would have been high, in association with that from nephritis and cerebral hæmorrhage, rather than that from valvular disease, but ten out of twelve deaths from myocardial ('other heart') disease occurred at ages over 65, and so are not taken into account in calculating the C.M.F. Mortality excess rises to extreme degree from certain causes at certain ages. That from phthisis is over four times average at 35–45 (7 deaths), and nearly seven times at 65–70 (2 deaths), while that from chronic nephritis is nine times the average at 45–55 (4 deaths), and 17 times at 35–45 (3 deaths). With the change in definition the numbers in the occupation have become too small to bear much detailed analysis, but whatever the degree of the significance of any one of the excesses quoted, taken singly, there can be no doubt as to that of the combination.

There was no death from lead poisoning, though the high rates from nephritis and cerebral hæmorrhage suggest the influence of lead, which has been a recognized factor in the past. In 1910–12 there were three deaths, but the population dealt with was three times as large.

39, 42. *Gas Fitters and Plumbers*.—These occupations have been tabulated separately because of difference in lead risk, the gas-fitter working with iron piping and the plumber with lead, though in both cases joints are made with lead. Table B shows that the total mortality of neither occupation presents any remarkable feature at any age, and Table F that the same may be said for causes of mortality at all ages, the worst positions recorded

there being 163 for plumbers from chronic nephritis and 153 from cerebral hæmorrhage. The proportionate excesses for these two causes in Table D, 92 and 43 per cent., are the highest there recorded for either occupation. This conjunction of causes in chief excess is presumably connected with the lead risk to which plumbers are especially exposed. Table 7 shows that there were 14 deaths from lead poisoning amongst plumbers and 2 amongst gas and pipe fitters (group 39), the corresponding crude mortalities being 38 per million of all ages for gas and pipe fitters, and 98 for plumbers. The latter rate is exceeded only by those for pottery kiln and oven men, pottery dippers and painters, and painters and decorators, amongst the 178 occupation groups.

40. *Metal Grinders* return an excess of mortality in Table B amounting to 97·7 per cent., which applies in some degree to all ages, but chiefly to 35–70, at which ages it ranges from 80 to 141 per cent. Little significance attaches to the apparent approach to normal at ages over 70 suggested by excess of only 13 per cent., for this may be largely due to the relatively small numbers at the higher ages within the group (*see* page xi). But for grinders in the cutlery trade (group 40a) the C.M.F. excess amounts to 229·5 per cent., a figure exceeded only by that for underground workers in tin and copper mines. As the cutlery grinders form almost one-fifth of the whole, the high mortality of grinders is largely due to them, the C.M.F. for grinders not in the cutlery trade being 1,588. The special mortality of grinders in the cutlery trade—a Sheffield industry—is believed to be due to silica risk from the abrasive used, natural sandstone, whereas in other grinding processes this dangerous material is now largely replaced by less harmful substances, such as emery (alumina) and carborundum (carbide of silicon). Much depends also on the method in which the abrasive is used. The report referred to (page lxxii) states that the dust evolved from machine-grinding on wet manufactured wheels causes little danger to health.

Table F shows by comparison how high is the mortality even of metal grinders as a whole. Only three occupations in the table return a higher total rate. And all the separate cause rankings, with the one unimportant exception of peptic ulcer, show grinders as holding an unfavourable position. The worst are as follows: Phthisis 175, 4256; bronchitis 170, 3155; pneumonia 165, 1885; cancer 162, 1503; and influenza 160, 1635. Peptic ulcer and accident are the only causes not in excess for grinders in Table D. The low rate for accident, which applies in only slightly smaller degree to cutlery grinders, working on large sandstone wheels, is the more surprising as the bursting of these stones is a recognised risk for this occupation.

40a. *Cutlery Grinders*.—The excess mortality, 229·5 per cent. at 20–65, noted above applies to all ages except 16–20, at which a ratio of 64 per cent. in Table B suggests that the high mortality at later ages is not due to a poor class of recruit. At all ages from 25 to 65 it is questionable whether the mortality of these men is not really the highest amongst the 178 occupations compared, for it is exceeded, as is their C.M.F., only by that of tin and copper mine underground workers (Table E), to the probable inflation of whose rates reference has been made on page lxvi. If the Cornish miners' rates are in truth largely overstated from the causes there discussed, those for cutlery grinders must be regarded as highest of all at each age 25–65. Mortality is relatively highest in later middle life, reaching four times the average at 45–55, and over three times average at all ages 35–65. The causes of this excessive mortality are shown by Table F to be much the same as for grinders in general, the worst figures being as follows: Influenza 178, 2931; bronchitis 178, 7282; cancer 177, 1938; myocardial disease 177, 2834; pneumonia 177, 2439; and phthisis 176, 7878. Thus from none of these important causes were higher rates returned by more than two other occupations. The cancer position is remarkable in the case of an occupation not known to involve any special cancer risk, but the adjacent position (176) is occupied by another occupation of high silica but no obvious cancer risk—underground workers in tin and copper mines. These two occupations return the highest total and, except for waiters, the highest cancer mortalities of the 178. The cancer excess for cutlery grinders is confined to ages under 65 (but *see* page xi). There is heavy excess (66 per cent.) for cancer of the stomach, but unfortunately 12 out of the 19 cancer deaths fall under the heading of "other sites." There was no death from skin cancer. Some of the cause mortality rates reach fantastic dimensions at particular periods of life. That from phthisis is 789 per cent. of average at 35–45, 1,329 per cent. at 45–55, and 1,384 per cent. at 55–65; and the bronchitis rate between 35 and 70 varies from 573 to 845 per cent. of average. The greatest excesses for pneumonia are 4·76 times average at 45–55 and 5·79 at 70 and over.

41. *Metal Polishers, &c.*—As polishing may be looked upon as a modified form of grinding, so the mortality of polishers presents similar features to that of grinders in a

somewhat lesser degree. Their record for total mortality is 160, 1443 (Tables D and F), and the worst figures for separate causes are cancer of the stomach, 177, 1963; influenza, 172, 1918; and pneumonia, 171, 2026. The phthisis rate is 2.12, and that for bronchitis 1.96 times average. So the special excess of mortality from respiratory disease and cancer just noted for the two occupations of chief silica risk dealt with—tin and copper mining and metal grinding—applies also to metal polishers, who may also be exposed to some silica risk from the nature of the abrasives used.

43. *Riveters and their labourers.*—This is chiefly an outdoor occupation carried on under conditions involving much exposure to the weather, but little to harmful dust, in which respects it may be compared to agriculture. The C.M.F. from all causes exceeds average by 6.2 per cent., most ages returning moderate excess. No very bad rankings are recorded in Table F, that of 161, 1697 from syphilis &c. being the worst. There is also considerable excess (60 and 35 per cent.) from bronchitis and pneumonia, and slight excess (17.5 per cent.) from phthisis.

44. *Tinsmiths and sheet metal workers* return a C.M.F. from all causes 1.1 per cent. in excess of average, which calls for no special comment, either as to age or cause, except that, notwithstanding two deaths (Table 7) from lead poisoning (solder), there was no appreciable excess of mortality from either chronic nephritis or cerebral hæmorrhage.

45. *Gold, silver, and white metal smiths* return a C.M.F. from all causes slightly below average (961). Much the same ratio applies to most ages, but a mortality excess of 84 per cent. at 16–20 suggests that this may be selected, as a light occupation, by semi-invalids. The causes chiefly responsible for this excess, tuberculosis (particularly), heart disease, pneumonia, and appendicitis, are, on the whole, consistent with this hypothesis. Tables D and F reveal no cause mortalities calling for comment.

46. *Electrical engineers fitters and wiremen.*—Mortality does not depart far from average at any age, but is on the whole in slight excess (4.2 per cent.). Table F shows that it is not outstandingly high or low from any cause, the worst positions recorded being syphilis &c., 154, 1565; peptic ulcer, 146, 1544; cirrhosis of the liver, 138, 1479; and accident, 132, 1122.

47. *Makers of watches, clocks, and instruments* return death-rates much below the average at all ages over 35, the C.M.F. ratio for all causes being 80.4 per cent. (position 26). Mortality is very low from respiratory disease (8, 446) and accident (6, 181); but high from suicide (155, 1527).

48. *Tanners and leather dressers.*—This group includes the skilled tanyard occupations, the unskilled being excluded, as in other similar cases, because many are not subject to the characteristic tanyard conditions, and because of their greater liability to change of industrial surroundings. Total mortality is 11.1 per cent. in excess of average (Table B), this excess being widely distributed over life. Causes of death yielding high mortality include phthisis (139, 1507), and digestive diseases (150, 1336), amongst the latter of which peptic ulcer, ratio 1,772, and cirrhosis of the liver, ratio 1,865, yield larger excesses than any other causes in Table D.

49. *Leather Goods makers* are subject to a mortality lighter than average at all ages over 35 years, but under that age their death-rates are above normal.

The only cause showing any considerable excess for this group in Table D is valvular heart disease (ratio 1,303).

50–65. *Textile Workers.*—Certain features of the mortality of these men as a whole have already been discussed on pages xxxiii–vi.

50. *Wool Sorters.*—At ages under 45 mortality is considerably above the average, indeed at 20–35 there are only about 20 occupations out of the 178 which return a higher death-rate. But after 45 the rate is only about average, and the whole experience at 20–65 is summed up by 22.5 per cent. excess for the C.M.F. Mortality is particularly high from diabetes (175, 3475), suicide (177, 3214) and peptic ulcer (175, 3108). There is considerable excess from syphilitic diseases (171, 2041) and pneumonia (159, 1643), but little from phthisis or bronchitis.

51. *Cotton Blow Room Operatives* are engaged in the preliminary preparation of the fibre and are much exposed to dust. Their mortality is very high, the C.M.F. from all causes being 52 per cent. above average; indeed, there are only 15 occupations which experience

a higher rate. The excess applies to every age group, being lowest between 25 and 35, where it is 13 per cent., and ranging from 45 to 93 per cent. at other ages.

Their mortality position in Table E is consistently bad throughout life, that of 163 for the C.M.F. being very generally approximated to at the various ages. Their worst cause mortality figures are as follows:—Chronic nephritis, 176, 2983; cerebral hæmorrhage, 169, 2178; respiratory diseases, 171, 2432; pneumonia, 175, 2278; diabetes, 173, 3238; digestive diseases, 170, 1713; and suicide, 171, 2053. Against these may be set phthisis, 39, 750; accident, 12, 270; and one or two less important causes.

52. *Rag Grinders, Wool Willowers, &c.*, are a small body of men numbering 4,071 at all ages, and their mortality is correspondingly irregular. Their C.M.F. is in moderate excess (19·8 per cent.), each age rate except 16–20 and 25–35 being above average. Their worst cause mortality figures are cancer of the stomach 178, 2308; chronic nephritis 170, 2238; cerebral hæmorrhage 169, 2178; and peptic ulcer 170, 2196. Their respiratory mortality is below average (71, 895), the pneumonia risk being low (25, 678), though that from bronchitis is considerable (135, 1575). The phthisis rate is a little over average (107, 1093). Their mortality from cancer of the stomach is the highest among the 178 occupations, and is over $2\frac{1}{4}$ times the average.

53. *Cotton Card, &c., Tenters* have the highest death-rate of all the textile occupations dealt with. Their C.M.F. is 60 per cent. above average, and there are only ten occupations with a higher general death-rate.

At ages under 25 the death-rates are low, so it may be presumed that entrants are healthy, but all later ages return excess, varying from 41 to 92 per cent.

Table F shows that the death-rates from many causes are amongst the highest for the 178 occupations. Outstanding positions, with corresponding C.M.F. ratios, are as follows:—Influenza 171, 1876; cerebral hæmorrhage 177, 3065; chronic nephritis 168, 2119; circulatory disease 175, 1914; valvular heart disease 178, 2170; pneumonia 173, 2181; peptic ulcer 177, 3589; and suicide 169, 1823. The cancer position is 155, ratio 1,420. The occupation is not a large one—4,448 men at all ages—but the numbers of deaths on which the mortality positions and ratios quoted are based are sufficient to afford reasonable significance to them, the smallest being 4 for suicide, and the conjunction of so many causes of exceptionally high mortality bears a significance for the occupation which cannot be mistaken. Health conditions are bad, and they appear to be bad generally rather than from the operation of any special occupational risk, so presumably the adverse conditions which transform the favourable experience at 16–25 into the high mortality at later ages do so by a general lowering of resistance to disease and deterioration of the various organs more or less alike.

54. *Wool and Worsted Card, &c., Frame Tenters* belong to the same census occupation groups (code nos. 353 and 363) as the cotton workers just dealt with, but are distinguished by the fibre carded, &c., which gives them a different assignment in the industrial tabulation (see Industry Tables, 1921 Census, Table 3). Their mortality is above average at all ages, the low mortality of the young cotton carders not being met with in their case. But the general excess as measured by the C.M.F. is only 37·3 per cent. as against 60·1 for the cotton carders, and 27 occupations return a higher mortality. There are no such extreme positions to be noted in Table F as for the cotton carders, the worst being 169 (ratio 1,620) for digestive diseases. But though they die less from respiratory disease they die more from phthisis than the cotton carders, their position being 144 (ratio 1,591) as against 98 (1,057). For the wool as for the cotton workers the death-rate from chronic nephritis and from cerebral hæmorrhage is high, but not so high for wool as for cotton, especially as regards cerebral hæmorrhage.

55. *Cotton Strippers and Grinders*.—These men, whose function it is to keep the wire “clothing” of the carding engines (which clean the cotton and arrange its fibres approximately parallel), clean and in good order, work largely in the carding room, and are subject to the dusty conditions there prevalent. In various respects their mortality bears a general resemblance to that of cotton carders. The C.M.F. from all causes, 1,396, is exceeded only by those for cotton carders and blow room operatives in the textile trades, and by 24 others of the 178 occupations (Table E). As with the carders a period of low mortality (20–45) is succeeded by large excess for the rest of life, but though the excess becomes much greater it starts later in life (45 as against 25) than for the carders. Their death-rate at 65–70 is exceeded only by that of underground tin and copper miners (Table E).

The worst disease positions shown by Table F are : Influenza, 176, ratio 2121 ; circulatory disease 164, 1524 ; valvular disease of the heart 177, 2063 ; respiratory disease 174, 2856 ; and bronchitis 177, 5579, of which five causes three have been noted above as specially fatal also to cotton carders. Indeed, the valvular disease mortality of cotton strippers and grinders is exceeded only by that of their working partners the carders. Bronchitis is a specially heavy risk for strippers and grinders (exceeded only in the case of cutlery grinders) and pneumonia for cotton carders. Both, as also wool carders, are subject to considerable accident risk. Although their mortality from respiratory disease is so heavy the strippers and grinders' position in regard to phthisis is good (50, ratio 796). This is the more surprising in view of the high degree of association generally between phthisis and bronchitis (*see* page xviii).

56. *Cotton Spinners and Piecers.*—As regards distribution of mortality by age these men resemble strippers and grinders (as also wool spinners) in displaying comparatively low mortality in middle life (25–45), succeeded by increasing excess as age advances. The general excess is considerable, C.M.F. 1,248. The excess here shown for cotton spinners over cotton weavers—1248 : 1048, or 19 per cent.—is greatly surpassed by that shown by certain returns for Blackburn, published by the local Medical Officer of Health, which suggest that the rate for spinners in that town has over a long series of years been more than double that for weavers. This exceptional Blackburn experience is not to be explained as a result of omission in the local returns to take account of the relative ages of the workers concerned, for the records on pages 36 and 38 show that weavers are on the whole much older men than spinners, and in fact their crude death-rate works out at 1466 per 100,000 living as against 1346 for spinners. In this matter the experience of Blackburn seems to be totally at variance with that of the cotton industry generally, thus raising a problem which can only be examined in the light of local conditions.

Table F shows that the spinners' most outstanding positions for the causes of death distinguished are :—Cancer, 173 (ratio 1,648) and cancer of the stomach, 166 (1,603). The rates for Bright's disease and cerebral hæmorrhage are also high, and, as with so many other textile callings, that for valvular disease (163, 1494).

The special proclivity of cotton spinners to cancer, to which attention has been recently directed by the Home Office inquiry into and report upon cancer of the scrotum and groin in mule spinners, is thus confirmed by the records for 1921–23. Their special proclivity to skin cancer is discussed on page xxix, in association with the records for other occupations similarly affected. But Table 5 shows that their cancer excess is by no means confined to the skin, excess being greater, amongst other sites, for those not characterized by social mortality gradation. Of the three groups of sites so affected, skin larynx and upper alimentary canal, the two latter show less excess for cotton spinners than any of the three groups of "unexposed" (Table 4) sites.

57. *Wool and Worsted Spinners and Piecers.*—The similarity in age distribution of the mortality of these men to that of cotton spinners has been already noted. But the sum is less, their C.M.F. of 1,103 comparing with 1,248 for cotton spinners. The worst cause mortality records for wool spinners are :—Chronic nephritis 175, 2896 ; cerebral hæmorrhage 149, 1412 ; appendicitis 173, 2607 ; cirrhosis of the liver 169, 2656 ; and cancer of the stomach 163, 1536. Total cancer is also in excess, 144, 1,278, though less so than for cotton spinners. There is some apparent excess from skin cancer, but the basis of two deaths is insufficient to make this necessarily significant.

58. *Cotton Doublers Winders etc.* suffer mortality in excess of average at every age, especially in later life, their C.M.F. being 1,236. But Table F shows their death-rate from no cause to be outstandingly high, the worst positions recorded being 162 for heart disease, and 158 for circulatory, valvular, and other heart disease alike. High mortality from diseases of the circulatory system (and from chronic nephritis and cerebral hæmorrhage) is, indeed, a very general feature of the textile trades (*see* pages xxxiii–vi).

59. *Wool Doublers Winders etc.* furnish a total mortality (C.M.F. 970) well below that of similar trades in the cotton industry, but oddly enough several of their records for the causes distinguished in Tables C and D are distinctly worse than any applying to cotton doublers. The worst are :—Appendicitis, 176, ratio 3,034 ; circulatory disease, 170, 1568 ; diabetes, 164, 2041 ; and suicide, 158, 1551. With a few exceptions, notably woollen weavers, the textile occupations tend on the whole to high suicide rates. The phthisis mortality of wool doublers (15, 510) is much the lowest amongst the textile workers.

60. *Cotton Weavers.*—At all ages under 55 mortality is below or about average, but, as with various other textile trades (spinners, strippers and grinders, etc.), it increases considerably in later life, in this case after 55. The general result is slight excess,

expressed by a C.M.F. of 1,048. Next to wool doublers, cotton weavers return the lowest phthisis C.M.F. of all the textile trades (35, 731). Indeed, the only cause in Table F showing at all outstanding mortality is cerebral hæmorrhage (163, 1641). A similar ratio (1,651) for bronchitis yields a position of 138, showing that excess mortality of 65 per cent. from bronchitis is of far less significance than of 64 per cent. from cerebral hæmorrhage, forty occupations in the former case, and only 15 in the latter, returning higher rates.

The question whether the use of artificial humidity in weaving sheds, implying, as it does, high temperature, is prejudicial to health, is under special investigation by the Home Office, and at the request of that Department the deaths of weavers have been separately tabulated for two groups of towns, in one of which the majority of the sheds were "wet" (employing artificial humidity), and in the other dry. The towns dealt with and the results of the tabulation are recorded on page 115, and a comparison of the total mortalities at various ages of the two groups, and of their C.M.F.s from various causes, is made in Tables 19 and 20.

TABLE 19.—*Mortality at various Ages of Cotton Weavers employed in "Wet" Sheds and in "Dry" Sheds, as compared with that of all Occupied and Retired Civilian Males taken as 100 in each case, 1921–23.*

	Ages 20–65 (C.M.F.).	16–	20–	25–	35–	45–	55–	65–	70 and over.
All Cotton Weavers	104·8	102	97	88	79	93	131	142	117
In towns where artificial humidity is used in the majority of the sheds* ...	106·5	131	67	132	84	104	116	161	124
In towns where artificial humidity is not used in the majority of the sheds†	83·4	111	118	70	65	63	105	135	101

* See note * on page 115.

† See note † on page 115.

TABLE 20.—*Standardized Mortality (C.M.F.) of Cotton Weavers, aged 20–65 years, employed in "Wet" Sheds and in "Dry" Sheds, from certain Selected Causes, and Comparison with that of all Occupied and Retired Civilian Males taken as 1,000, 1921–23.*

	All Cotton Weavers.		Cotton Weavers in towns where artificial humidity is used in the majority of the sheds.*		Cotton Weavers in towns where artificial humidity is not used in the majority of the sheds.†	
	C.M.F.	Ratio.	C.M.F.	Ratio.	C.M.F.	Ratio.
All Causes	1,048	1,048	1,065	1,065	834	834
Influenza	39·3	1,080	55·3	1,519	14·2	390
Tuberculosis (all forms)	136·7	771	174·3	983	97·0	547
Tuberculosis of the respiratory system	119·5	731	156·4	957	63·8	390
Syphilis, &c.	16·6	613	18·1	668	8·6	317
Cancer (all sites)... ..	126·1	982	106·5	829	98·7	769
Cancer of the stomach	35·6	1,207	27·9	946	32·7	1,108
Diabetes	14·4	1,180	13·9	1,139	26·8	2,197
Cerebral hæmorrhage	73·7	1,641	62·1	1,383	48·4	1,078
Diseases of the circulatory system	190·7	1,253	110·5	726	245·8	1,615
Diseases of the heart	161·6	1,253	86·8	673	227·2	1,761
Valvular disease of heart	89·6	1,413	49·5	781	109·6	1,729
Other heart disease	72·0	1,098	37·3	569	127·6	1,945
Diseases of the respiratory system	163·1	1,075	210·7	1,389	73·7	486
Bronchitis	81·9	1,651	108·0	2,177	39·8	802
Pneumonia	70·1	824	83·4	980	33·8	397
Diseases of the digestive system	67·8	1,139	96·3	1,618	66·0	1,109
Peptic ulcer	15·8	1,000	18·4	1,165	13·6	861
Appendicitis	11·1	1,247	13·0	1,461	21·2	2,382
Cirrhosis of liver	2·5	260	4·5	469	—	—
Chronic nephritis	42·9	1,243	45·0	1,304	32·7	948
Suicide	33·5	1,379	32·9	1,354	15·7	646
Accident	11·0	223	12·5	254	25·9	525

* See note * on page 115.

† See note † on page 115.

As the subject is still under consideration by the committee concerned, no comment on these figures would be appropriate here.

61. *Wool Weavers.*—At no age under 65 does mortality depart greatly from average, but in old age it is in definite excess, rising to 72 per cent. at 70—. The C.M.F., 1,082, is just a little higher than for cotton weavers. In contrast with the latter, phthisis mortality is rather high (115, 1162), but the case is reversed for respiratory disease, mortality from which is very light (positions, cotton 107, wool 21, ratios, cotton 1,075, wool 672). The worst disease positions revealed by Table F are for diabetes, 170 (ratio 2,566), circulatory disease, 161 (1,480), and valvular disease, 170 (1,666), but as against these we have pneumonia, 8 (471) and suicide, 6 (288).

62. *Weavers of Other Textiles* (other than cotton and wool). These men are few in comparison with cotton weavers, who form 76 per cent. of the whole, and fewer than the wool weavers. Their mortality is low at most ages—C.M.F. 888. Table F reveals no outstanding mortality from any cause, the worst records being, as so often with textile workers, chronic nephritis, 142, 1455; cerebral hæmorrhage, 157, 1463; and heart disease, 134, 1244.

63. *Hosiery Frame Tenters and Machine Knitters.*—This is the characteristic occupation of hosiery manufacture, accounting for nearly half the males engaged in production (and repair and maintenance of plant) in this industry (Census 1921, Industry Tables, Table 2). The census table quoted shows that it is the only textile occupation of any numerical importance in the hosiery industry. Mortality is below average at most ages, yielding a C.M.F. of 929. The only bad positions recorded in Table F are for cancer of the stomach, 170 (ratio 1,780), cirrhosis of the liver, 168 (2,625), digestive diseases generally, 118 (1,139), chronic nephritis, 133 (1,365), and suicide, 172 (2,263). The ratios for phthisis and respiratory disease are low (741 and 746).

64. *Dye Mixers and Dyers.*—Mortality is in considerable excess at all ages, but in great excess at none, there being close general approximation to the C.M.F. of 1,304. And, similarly, Table F records moderately high mortality from all causes dealt with, but outstandingly high from none, position varying from 96 (suicide) to 167 (influenza). The ratios in Table D vary in the same way from 930 for syphilis &c. (the only one below 1,000) to 2,004 for bronchitis. The record thus points more to a somewhat low general standard of health than to any particular occupational risk. There is no significant excess of mortality from skin cancer (*see* page xxix), though three deaths at 55–65 yield a rate three times the average at that age.

65. *Scourers, Calenderers and Finishers.*—Neither in its amount (C.M.F. 1,015), distribution by age, nor distribution by cause, does the mortality of these workers present any features calling for special comment.

66. *Cutters (hand) of Textile Goods and Clothing.*—Mortality is somewhat above average (C.M.F. 1,168), especially in early life, but after 35 most of the excess disappears (Table B). The deduction might be drawn that this light occupation attracts recruits of poor physique, unfitted for more strenuous callings, but in that case the early excess might be expected to apply also to tailors, which it does not, though the progressive change for boot repairers from high to low mortality as age advances suggests this explanation for a kindred occupation. As regards causes of death, the most striking feature is high mortality from phthisis (158, 1878). This, of course, supports the suggestion of Table B as to the health of entrants, but the excess is quite as great in late as in early life, so conditions of work must share responsibility. There is also moderate excess mortality from respiratory disease, and somewhat greater from chronic nephritis and cerebral hæmorrhage. Barristers alone return lower influenza mortality.

67. *Tailors* make up the pieces of cloth cut out by group 66 into the actual garments. Thus, their work is mainly sewing, by hand or machine, while to the cutter falls the higher function of design. Tailors are now largely females, and much of the work, especially in London, a great seat of the industry, is carried out in the workers' home. The mortality of tailors is less than that of cutters (C.M.F. 1,015 as against 1,168), the high rates of the latter at 16–35 not being shared by tailors, whose mortality is not in notable excess at any age.

Table C shows that the advantage of tailors over cutters is almost entirely accounted for by lower rates from phthisis and respiratory disease. The total cutters' C.M.F. excess is, as stated above, 153, and of this 74·7 is accounted for by phthisis and 46·8 by respiratory disease, or 121·5 together—about 80 per cent. Possibly more exercise in the

open air, involved by their conditions of work, may help to account for the lower phthisis mortality of the tailor, but conditions vary greatly as between factory workers and the home workers engaged in the bespoke tailoring trade, making it very difficult to generalize.

68. *Hat Formers, Plankers, Stiffeners*.—These men, 4,761 in number, constitute much the most important occupation in hat manufacture. Table 2 of the Industry Tables of the 1921 Census shows that, excluding employers and managers, about half the males engaged in making felt and straw hats, the two chief branches of the trade, belong to this occupation. Sewers and trimmers come next in importance, but their work is chiefly in the hands of females. Table B may be said to record considerable excess of mortality at every age, as the absence of any deaths amongst the 365 youths aged 16–20 must be largely a matter of chance. At higher ages the excess varies from 29 to 95 per cent., the C.M.F. being 1,396. Mortality is high from most causes, particularly phthisis (152, 1735), cancer (172, 1619), cerebral hæmorrhage (161, 1532), circulatory disease (172, 1658), heart disease (173, 1850), respiratory disease (138, 1409), digestive disease (157, 1395), cirrhosis of the liver (166, 2510), and chronic nephritis (149, 1530). Deaths from cancer of the skin numbered 4, as against 1·08 to be expected at the rates for the occupied and retired population in general—an excess which appears to be probably significant.

69. *Bootmakers* (hand) are now almost entirely boot repairers, and are of high average age. Their medium mortality (C.M.F. 1,014) is made up of high, but gradually decreasing, rates at ages under 55 and definitely and increasingly low rates in later life. The high rates in early life may be accounted for by choice of this sedentary occupation by semi-invalids physically unfit for harder work. The circumstances of the time, when replacement of hand by machine work has lessened the number of young men taking up the trade, must, no doubt, accentuate this selective process. But whatever the physique of entrants the low mortality in later life speaks well for the health conditions of boot repairing. Tables D and F reveal no outstanding excesses of mortality from any cause. The most important is that from phthisis (128, 1307). The age distribution of the phthisis excess supports the hypothesis of selection of the occupation by the physically unfit, for excess occurs at all ages 16–70, but most of all at 16–20. And the excess for non-respiratory tuberculosis (three times average, Table C) is much greater than for respiratory, suggesting that youths suffering from spinal and joint, &c., tuberculosis tend to select this occupation.

70, 71. *Factory bootmakers* are divided into “clickers” (more or less equivalent to cutters in tailoring) and others. The total mortality is in much the same moderate excess (C.M.F.s 1,104 and 1,120) for both. For both, also, the rates are in chief excess at ages up to 35, coming nearer average later, but more so for clickers than others. Both the factory groups return considerably higher rates than the repairers at ages over 55. The most important causal mortality excess is, as with boot repairers, from phthisis (clickers 156, 1820; others, 157, 1821). This excess applies to all ages except 16–20 and 55–65 for clickers, and to all without exception for others. Mortality from other forms of tuberculosis is low in comparison. Though twice as high for others as for clickers, it is less than half as great for others as for boot repairers. So the suggestion derived from the mortality returns, that non-pulmonary tuberculosis may influence the choice of occupation for boot repairers, does not seem to apply to the excess mortality from tuberculosis (wide-spread throughout life) of factory bootmakers. The only other forms of mortality recording much excess are cerebral hæmorrhage (clickers 156, 1461; others 121, 1167—no corresponding excess for chronic nephritis) and circulatory disease (clickers 136, 1283; others 92, 1047).

72. *Millers (Grain)*.—Mortality is low. The C.M.F. for all causes is 785, position 23. At ages under 55 the ratios are still lower, but after this age they approach or exceed average. The lowest cause mortality figures are for cancer (10, 688) circulatory diseases (14, 719), valvular heart disease (5, 393), peptic ulcer (4, 222) and chronic nephritis (5, 432). The only important excesses are for diabetes (128, 1221) and suicide (152, 1494).

73. *Bakers*.—The all causes C.M.F. is 864, and, except for an excess of 7 per cent. at 20–25, the death-rate is below average at every age. Table F records low or moderate mortalities from each cause, the worst records being 105, 1074 for suicide and 101, 1016 for diabetes, and the best, 16, 677 for digestive diseases, 20, 667 for chronic nephritis, and 26, 673 for cerebral hæmorrhage. The only causes of more than average mortality are phthisis, diabetes, and suicide.

74. *Brewers* numbered only 2,531, as only a minority of the men employed in breweries are properly so described, the brewer being a skilled man, employed in the direction of less

skilled labour. Mortality was more than one-third above average—C.M.F. 1,346—but, as is natural in view of the small numbers concerned, the age rates are very irregular. Mortality is in large excess from many causes. That from syphilitic diseases (mainly G.P.I.) is the highest for any occupation (178, 4808). Only two occupations, barristers and publicans, return higher rates for digestive diseases (176, 3133), while from appendicitis (177, 4674) the brewers' rate is higher than any but the barristers', and from cirrhosis of the liver (177, 8000) than any but the publicans'. The record for peptic ulcer is 173, 2633. Other causes of relatively high mortality are suicide (175, 2650), cerebral hæmorrhage (172, 2245), chronic nephritis (155, 1620), accident (162, 1582), and cancer (154, 1398). On the other hand, mortality from phthisis is low—29, 706. Brewers evidently suffer the consequences of good living, and phthisis is not one of these. Pneumonia mortality is very low (5, 445), which may seem surprising in view of the temptations to and evidence of alcoholism, but the three deaths under 65 on which the pneumonia C.M.F. is based prove on test insufficient to furnish a significant rate, the occupation being, as noted, a very small one—too small, indeed, for the purposes of this Report. As to the general conclusion, however, that its mortality is excessive from many causes, the figures available leave no room for doubt.

75. *Cellarmen*.—Though not a large occupation (6,480 men), this has more than twice the numbers of the brewers. Exposure to alcoholic risk is similar, and the general character of the mortality much the same. Its excess is greater, the C.M.F. being 1,510, and every age rate above the average, especially those under 65. As for brewers, mortality is high from syphilitic diseases (161, 1697), cancer (175, 1801), digestive disease (172, 1857), cirrhosis of the liver (175, 4698), chronic nephritis (164, 1930), and suicide (162, 1621). To these have to be added circulatory disease (169, 1562), influenza (170, 1863), and phthisis (143, 1577). It will be seen that only three occupations (tin and copper underground miners, cutlery grinders, and waiters) suffered more from cancer. The only important excess distinguished in the tabulation for any site is that for the œsophagus (C.M.F. 44·4, ratio 4577, in contrast with stomach, ratio 885—*cf.* correlations quoted on page xxv). But there is large excess from cancer of undistinguished sites.

76. *Tobacco Factory Operatives*.—There is a C.M.F. excess of 15 per cent., irregularly distributed by age. Mortality records are bad for phthisis (160, 2002), diabetes (167, 2262), circulatory disease (158, 1426), and digestive disease (164, 1472). Contrast is provided by chronic nephritis (7, 470), and cerebral hæmorrhage (10, 528).

77. *Foremen and Overlookers (Wood Working)*.—The exceptionally low mortality (position 5) of this occupation has been already discussed along with that of other foremen (page lv). The mortality recorded is below average at every age, falling at 35–45 to 34 per cent. of the general mean, but rising after 65 to over 90 per cent. This distribution of mortality, with maximum advantage in middle life, greatly lessened or entirely wiped out in old age, applies to other foremen groups also. Table D shows mortality as below average for every cause except chronic nephritis (131, 1322), but Table F shows outstanding mortality also from cancer of the stomach (position 171). This record is somewhat surprising. The rate for cancer of all sites is low (40, 843), and the basis of fact (almost 27,000 years of life and 16 deaths at 20–65) sufficient to give significance to the stomach cancer rate, yet its ratio is 1,793. There were 11 deaths at 55–65.

78. *Cabinet Makers*.—The C.M.F. of 1026 corresponds with age rates none of which differ from the average by more than 11 per cent. The distribution of mortality by cause is no more remarkable than that by age, the worst records being 128, 1218 for cancer and 144, 1342 for cancer of the stomach, and the best 22, 678 for chronic nephritis, and 36, 375 for cirrhosis of the liver.

79. *Carpenters, &c.*—The death-rate of this large class of workers (almost 300,000) is a little below average at every age, the C.M.F. ratio of 843 being closely adhered to throughout life. The distribution by cause corresponds, the worst position in Table F being 86 for appendicitis, and the best 30 for non-valvular heart disease. As already noted, carpenters and agricultural labourers are the only occupations whose mortality ratio does not exceed 1,000 from any cause in Table D, but the carpenters all causes ratio of 843 is considerably higher than that of the agricultural labourers (688).

80. *French Polishers*.—This is much the least healthy of the woodworking occupations dealt with, the death-rate being above average at every age after 25, with a C.M.F. of 1230. But though the substance polished is wood, the more active environmental influence may well be that of the polish. Whether this contributes to the mortality or not, this is probably

in part at least to be explained by the lightness of the occupation attracting recruits of poor physique, who would be less likely to become carpenters or sawyers. The greatest excess of mortality at any age, 98 per cent., occurs at 16–20, amongst youths who can have been but a short time in the trade, thus suggesting that it may be selected by semi-invalids desirous of light work.

Amongst the worst mortality records are phthisis (150, 1641), cancer (140, 1257), respiratory disease (134, 1336), peptic ulcer (169, 2184), and suicide (147, 1428). There is no significant excess of skin cancer (two deaths).

81. *Sawyers and Wood Machinists*.—These men resemble carpenters in experiencing light mortality at most ages (below average at all ages 20–65, C.M.F. 868) and from most causes. Their worst position in Table F is for cancer of the stomach (134, 1241) and their best for chronic nephritis (14, 588).

82. *Upholsterers*.—Here again the record is similar though the material worked in is, of course, entirely different. Generally favourable rates at all ages yield a C.M.F. of 864; and the only bad positions in Table F are for phthisis (123, 1262) and cancer (113, 1107), mortality being below average for every other cause (Table D).

83. *Paper Makers*.—This is another healthy occupation, with a C.M.F. of 761, and mortality below average at all ages over 25. The causal records are generally good, diabetes (148, 1500) being the chief exception.

84, 85, 87. *Printers*.—These three groups, hand and machine compositors, and printing machine minders and assistants, experience a mortality differing little from the average at any age except for an excess at ages over 70 for machine compositors so great as to suggest want of correspondence between the census and registration figures. Although much has been written of the liability of these men to phthisis, their returns suggest no excessive risk under this head, varying as they do from 121, 1247 for machine minders to 130, 1320 for machine compositors. There is no outstanding mortality from any cause, even the accident risk for printing machine staffs being small (52, 503). There is, however, a certain lead risk (page lii).

86. *Photographers* are chiefly employed in exclusively photographic businesses, although considerable numbers work for the printing industry, including under this the newspaper press, lithography, and process engraving (Table 2, Industry Tables, Census 1921). Mortality is not far from average at any time of life, and the C.M.F. of 882 resembles those for other printing occupations. Their worst causal records are for diabetes (156, 1631) and cirrhosis of the liver (156, 2021). Respiratory disease is distinctly low (19, 602), much more so than phthisis (77, 970).

88. *Bookbinders, &c.*—Mortality is high in youth, but after 25 does not depart much from average, the general result being a C.M.F. of 1098. Phthisis mortality is slightly lower than for printers, but the rate for cancer is high (164, 1505). The only other cause of noteworthy mortality is peptic ulcer (168, 2101).

89–99. *The Building Trades*.—These eleven groups comprise two, masons and slate masons, of notably high mortality, but for the remaining nine the rates are either about average or in one or two cases definitely below it. The lowest C.M.F. returned is that for foremen (732), the death-rate being low at all ages under 70, though less so as life advances. Their phthisis C.M.F. of 36.1 (ratio 221) is the lowest for any occupation, but they are subject, like builders in general, to high accident risk (170, 2089). In view of the considerations discussed on page lv the record for these as for other foremen must be regarded as doubtful.

89. *Builders and Contractors* (employers and managers) are of average mortality (C.M.F. 1005), i.e., of considerably over average for the employing class. The rates returned are low in early life, but become high as age increases. They share the high accident risk of their employees, 143, 1247, and suffer generally from diseases of circulation and digestion—circulatory diseases, 125, 1202; cerebral hæmorrhage, 155, 1445 (chronic nephritis, 140, 1441); and digestive diseases, 128, 1178. Their cirrhosis of the liver record is 139, 1281; and that for diabetes, 125, 1213. The general picture suggests good living as a factor in builders' mortality.

91. *Bricklayers* (C.M.F. 854) are of less than average mortality at every age, and from almost every cause. Although their accident rate is below average (ratio 957) it is above that of most occupations, the position being 115. This is the highest accident position (lowest rate) amongst the building trades, as slate masons (position 11) are exempt from the builders' accident risk.

92. *Plasterers* (C.M.F. 1011) are of average mortality, generally speaking, throughout life. They share the accident risk of the building trade (138, 1189), and have a bad record for cancer (142, 1266), and in a less degree for respiratory disease (119, 1165) and chronic nephritis (120, 1246).

93. *Slaters and Tilers* form a small occupational group (5,369 men at all ages), and their death-rates at ages are irregular, but with a general tendency to relative increase as life advances. The C.M.F. is 1037. Mortality is high from cancer (158, 1434), accident (155, 1462), and pneumonia (139, 1328).

94. *Masons, Stone Cutters and Dressers*.—Death-rates do not exceed average up to 35, but are high later, the C.M.F. being 1390, a rate exceeded by only 25 occupations. The most outstanding risks are from phthisis (161, 2032) and bronchitis (152, 1994), but mortality from most causes exceeds the average.

The deaths of stone masons have been tabulated by counties according to the kind of stone mainly worked, and the following tables show the extent and causes of the mortality of masons working in limestone and sandstone respectively. The facts on which these tables are based will be found on page 116. The numbers available for workers in igneous rock (*see* page lxvii) were too small to warrant separate presentation.

TABLE 21.—*Mortality at various Ages of Masons, Cutters, and Dressers of different kinds of Stone (represented by those working in certain selected counties—see page 116) as compared with that of all Occupied and Retired Civilian Males taken as 100 in each case.*

	Ages 20–65	16–	20–	25–	35–	45–	55–	65–	70 and over.
All Stone Masons, Cutters, and Dressers ...	139·0	100	94	93	140	161	143	127	114
Limestone Masons, Cutters, and Dressers...	119·7	105	55	105	129	143	113	100	111
Sandstone Masons, Cutters, and Dressers...	206·8	192	30	67	185	251	250	215	119
Others	118·1	60	138	98	121	126	115	110	113

The great excess of mortality for sandstone masons corresponds with that noted on page lxvii for sandstone miners and quarrymen. But it should be noted in the one case, as in the other, that the sandstone counties (Cheshire, Lancashire and the West Riding) are all situated in the north of England, whereas the contrasted limestone counties are scattered over all parts of the country. In view of the great excess of mortality in the north over that in other parts of England, this fact suffices in itself to account for a considerable proportion of the sandstone excess. On the other hand, the sandstone masons' C.M.F., 2068, may somewhat understate their mortality, as the usual close accord between it and ratio of actual to "expected" deaths is not found here, the ratio, 226 per cent., being considerably higher than 206·8. The sandstone workers' excess is confined in the main to those ages (over 35) at which the mortality of masons in general exceeds the average. The excess for masons as a whole is evidently much influenced by that for sandstone workers, who form 23 per cent. of the total, the remainder being made up by 24 per cent. in limestone counties and 53 elsewhere. But for sandstone, limestone, and other stone masons alike the table shows that mortality, generally below average in early life, exceeds it at all ages from 35 on. It may be inferred, therefore, that the influence of stone dust is subject to much delay. It is great, but slow in action. Moreover, it appears to be both greater and slower in action for masons (including cutters and dressers working in dusty sheds, etc.), than for quarrymen, as may be seen by comparing Tables 17 and 21. The causes of mortality are compared for limestone and sandstone masons in Table 22.

Rates are higher for sandstone than for limestone workers from every cause distinguished (if heart disease is dealt with as a whole), except diabetes, peptic ulcer, and accident.

The causes chiefly in excess are phthisis and respiratory diseases, which are also in great, though not so great, excess for sandstone quarrymen (Table 18). But the bronchitis pneumonia ratio is very different, pneumonia mortality being much the higher for quarrymen and bronchitis for masons. In both cases the general features of the sandstone workers' mortality are those associated with silica risk in general; and it may be noted that both for quarrymen and masons, the small number of deaths attributed to chronic interstitial pneumonia is very much greater for sandstone workers than for the more numerous limestone workers.

TABLE 22.—Standardized Mortality C.M.F. of Masons, Cutters and Dressers of different kinds of Stone, at ages 20–65, from certain selected Causes, and Comparison with that of all Occupied and Retired Civilian Males taken as 1000, 1921–23.

	All Stone Masons, Cutters and Dressers.		Limestone Masons, Cutters and Dressers.		Sandstone Masons, Cutters and Dressers.	
	C.M.F.	Ratio.	C.M.F.	Ratio.	C.M.F.	Ratio.
All Causes	1,390	1,390	1,197	1,197	2,068	2,068
Influenza	43·2	1,187	35·2	967	35·9	986
Tuberculosis (all forms)	363·4	2,050	313·7	1,769	615·3	3,470
Tuberculosis of the respiratory system	332·3	2,032	283·6	1,735	564·5	3,453
Syphilis, &c.	23·9	882	15·9	587	30·0	1,107
Cancer (all sites)	146·8	1,143	128·9	1,004	203·2	1,583
Cancer of the stomach	44·0	1,492	33·7	1,142	54·2	1,837
Diabetes	8·1	664	14·7	1,205	3·5	287
Cerebral hæmorrhage	58·9	1,312	54·2	1,207	95·7	2,131
Diseases of the circulatory system	184·2	1,210	167·4	1,100	253·3	1,664
Disease of the heart	159·8	1,239	151·5	1,174	199·4	1,546
Valvular disease of heart	79·0	1,246	67·0	1,057	121·7	1,920
Other heart disease	80·8	1,232	84·5	1,288	77·7	1,184
Diseases of the respiratory system	247·6	1,632	198·7	1,310	455·8	3,005
Bronchitis	98·9	1,994	60·0	1,210	235·9	4,756
Pneumonia	91·2	1,072	83·2	978	119·5	1,404
Diseases of the digestive system	65·8	1,106	49·6	834	83·3	1,400
Peptic ulcer	21·1	1,335	31·9	2,019	21·6	1,367
Appendicitis	5·6	629	—	—	—	—
Cirrhosis of liver	9·7	1,010	4·5	469	18·2	1,896
Chronic nephritis	40·9	1,186	46·3	1,342	47·2	1,368
Suicide	25·7	1,058	28·1	1,156	31·9	1,313
Accident	52·4	1,063	73·7	1,495	47·7	968

95. Slate masons and workers' mortality (C.M.F. 1596) is exceeded by that of only 11 occupations. It is in large excess at nearly every age and from many causes, especially phthisis (174, 3426) and circulatory diseases (176, 2139). But there were no deaths from diabetes, and mortality from digestive and respiratory diseases was low, as also from suicide and accident.

As of 2,596 working slate masons enumerated in 1921 the majority (1,332) were in one rural district in Caernarvon, Gwyrfaï (as well as one-third of the slate quarriers), a recent report to the Welsh Board of Health by one of its medical officers, Dr. T. W. Wade, on the alleged high mortality from tuberculosis of the respiratory system among slate quarrymen and workers in this rural district, is largely applicable to the workers now under consideration. Dr. Wade finds large excess of mortality from phthisis in later life for the slate quarriers and workers jointly of Gwyrfaï, greater for workers than quarriers. The present returns for groups 15 and 95 support this conclusion. In the following statement the phthisis and respiratory disease mortality, at each age dealt with, of slate quarriers and workers is stated as a percentage of that of the occupied and retired in general.

	20–65 (C.M.F.)	16–	20–	25–	35–	45–	55–	65–	70 and over.
Phthisis—									
Quarriers	159·4	—	39	141	122	185	327	638	142
Masons	342·6	—	92	311	283	372	689	886	853
Respiratory disease—									
Quarriers	70·3	—	—	—	47	103	81	96	101
Masons	75·7	579	—	—	63	75	106	194	203

“ While the men engaged in the quarries are not subjected to much slate dust the men in the sheds are constantly inhaling it.” These words, quoted from Dr. Wade's

report, serve to explain why the phthisis mortality is more than twice as high for masons as for quarriers. The low rates shown for other respiratory diseases do not usually accompany large excess of mortality from phthisis, but most of the experience dealt with is derived from North Wales, and it may be that local standards of diagnosis and peculiarities of nomenclature affect the matter. If any local tendency exists to describe as tuberculous conditions which would elsewhere not be recognized as of this nature, it may be compared with the large excess of mortality ascribed every year to infantile convulsions in Welsh certification. It may be significant that considerable excess of respiratory mortality for slate workers is reported at ages over 65. At these ages the distinction between tuberculous and non-tuberculous bronchitis and pneumonia is notoriously difficult, and if North Wales differs from England and Wales in attributing a larger proportion of such deaths to the agency of the tubercle bacillus, it does so in company with the United States of America.

96. *Platelayers* (C.M.F. 920) and 97. *Navvies* (C.M.F. 910) do very similar work, though that of the former is confined to the railways (and tramways), and have very similar mortality experience. In the case of each the rates are below average at most ages and from most causes, accident being a notable exception. The platelayers' position for this risk is 171, 2229; while for navvies the corresponding figures are 153, 1426.

98. *Painters and Decorators* suffer mortality differing little from the average at any age, but tending on the whole to exceed it. The C.M.F. is 1,074. By far their worst cause records are for chronic nephritis (162, 1904) and cerebral hæmorrhage (162, 1566). These excesses are doubtless associated with the lead risk to which the occupation is subject. Table 7 shows that of 150 deaths among the total population in the three years attributed to occupational lead poisoning, 63 were of painters, and from the same table it may be found that their age mortalities from this cause were 20–40 times the average.

99. *Building Trade Labourers* (builders', bricklayers', plasterers', masons', etc.) also experience mortality not far from average at any age—below it up to 35, and afterwards above. The C.M.F. is 1,060. Table F reveals no causal mortality worthy of note except the accident risk shared with the other building occupations (150, 1347). Cancer mortality is rather high (122, 1161), but the excess is less than for Social Class V (ratio 1229), to which these workers are assigned.

100. *Rubber Workers*.—Mortality is below average practically throughout life, but especially in its later stages, as expressed by a C.M.F. of 892. The worst cause records are for cancer (120, 1157), cancer of the stomach (135, 1244), and cirrhosis of the liver (163, 2365). Mortality from skin cancer was at about the average rate.

101. *Drafters and Brushmakers*.—Mortality is in large excess at all ages under 55, later approaching the average, so perhaps this light sedentary occupation attracts men of poor physique. The C.M.F. is 1320. The causes of death chiefly in excess are phthisis (170, 2376) and respiratory disease (153, 1703).

102. *Shipwrights* are men engaged in ship construction, who work in either metal or wood, or in both materials. (Those returned as metal or as wood workers are classified accordingly.) Their C.M.F. is 934, the death-rate being below average at all ages from 35 to 70. Their worst causal mortality records are for syphilis etc. (163, 1768), and accident (135, 1170).

103. *Shipyards Labourers*.—This group comprises all the unskilled workers in ship-building who could not be assigned as unskilled workers in the metal-working, woodworking, or painting sections. They experience excess mortality at every age under 70, and chiefly under 55. Their C.M.F. is 1,351.

Amongst many causes of mortality excess may be noted influenza (169, 1805), phthisis (146, 1602), syphilitic diseases (170, 2026), cancer, especially of the stomach (139, 1254), respiratory diseases (163, 2001), and accident (160, 1489).

104. *Gas Stokers*.—Mortality is high, C.M.F. 1,289, the excess chiefly affecting later life. It does not set in till 35–45, and thereafter steadily progresses with age. At 65–70 there are only two occupations of the 178, and at 70–, only one, with higher rates (Table E). Mortality is high from most causes, particularly influenza (164, 1747), cancer (171, 1598), respiratory diseases (150, 1644), and accident (145, 1278). The cancer excess applies especially to the skin (*see* page xxix), but although the C.M.F.s for the tongue oesophagus and stomach are either about or definitely below average (Appendix D), the rates for tongue and stomach are in great excess at ages over 65, those for the lip at 55–70, and those for undistinguished sites at all ages over 45.

105. *Railway officials* form a numerous body of men, and most are, no doubt, minor officials, so it is not surprising that their mortality record displays the peculiarities

characteristic of foremen in general (see page lv). The C.M.F. is only 679, and the death-rate is below the average at every age over 20. Most of the cause rates are also low, two associated with prosperity—diabetes and appendicitis—forming the chief exceptions. For diabetes the record is 131, 1270, and for appendicitis 136, 1382. From no other cause does the recorded death-rate exceed the average. Some portion of this favourable experience may be attributable to the medical examination to which entrants into the railway service in this as in other capacities are subjected.

106—110. *Other railway workers* are also of low mortality, except porters, whose C.M.F. is 1,023, the rate for signalmen (622) being even lower than that for officials. This statement applies, for each occupation, to each age from 20 to 65, but its significance is no doubt affected by the physical selection and supervision required in the case of men on whose single-handed adequacy the safety of railway travelling depends. This may explain the specially low mortality of signalmen, who have to work so much alone, as well as the higher rate for porters, whose responsibility is less, so that the no longer fit signalsman or shunter may become a porter. The tendency to increase of relative mortality in old age (Table B) may be due to withdrawal of the influence of this supervision, as well as to the general tendency towards approximation of mortality at this stage of life (page 123).

The quite exceptional rate for guards at 16–20 (over seven times average) seems to be due mainly to chance. Few men are guards so young, and the years of life at risk were only 462. But amongst these 154 individuals eight deaths happened to occur in the three years, of which 4 were due to tuberculosis and 2 to accident. At 20–25, also, tuberculosis was in (slight) excess for guards, but at all higher ages their rates were much below average. The consistently low mortality of railwaymen, other than porters, from every cause dealt with in Tables D and F can best be appreciated by observing their record in those tables. Not one of the four occupation groups concerned returns a high rate from any single cause, except shunters from accident (177, 3331), a rate exceeded only by that for conveyors of coal to the mine shaft. Even this excess, fully accounted for by the nature of the shunter's work, is approached by no other railway calling, though for all except officials (505) and signalmen (469) the accident ratio is over 1000. The only causes (in Table D) from which the mortality of locomotive drivers etc. exceeds average are diabetes and peptic ulcer; of guards, influenza and appendicitis; of signalmen, influenza, diabetes and cerebral hæmorrhage; and of shunters, syphilis etc., cancer of the stomach, cerebral hæmorrhage, non-valvular heart disease, bronchitis, and peptic ulcer. Porters and lampmen are not required to be, and evidently are not, so physically fit. They are alone in the railway service in suffering excess mortality (over average) from phthisis (113, 1150) and respiratory disease (100, 1039). Both these causes, as already seen, are more fatal to the porters' social class (IV) than to that of the other railwaymen (III). But, indeed, their rates from most of the causes distinguished in Table D, though in no case heavy, are higher than those of all the other railway occupations.

111. *Livery Stable and Garage Owners and Managers &c.* are surprisingly numerous (almost 40,000), and perhaps it is not to be wondered at, therefore, that, with a C.M.F. of 791, they share the low mortality of foremen in general. Low rates prevail at all ages under 70. The only causes from which mortality exceeds average are digestive diseases, suicide, and accident, the worst positions in Table F being appendicitis, 148 (ratio 1629), and suicide, 147 (1428).

112. *Drivers of Horse-drawn Vehicles* are nearly all engaged in the transportation of goods. There were 182,746 males so returned in 1921, as against 11,808 drivers of horse-drawn passenger vehicles, of whom only 3,866 were in private domestic service; so the "coachman" of former days has almost disappeared. Mortality for horse drivers is in consistent and considerable excess of average throughout life, the C.M.F. being 1,378—much higher than for any other road transport workers. Table A shows that mortality was highest for passenger drivers, whose ratio of registered to calculated deaths was 154, that of goods drivers (horse) being 136, and those of motor, etc., drivers, 86–89. Table D shows that the only causes therein distinguished from which the mortality of horse drivers does not exceed average are appendicitis and suicide. Table F shows that, while the relative position of these men is bad from almost all causes, it is worst for cancer, 157 (ratio 1432), respiratory diseases, 154 (1732), bronchitis, 156 (2044), pneumonia, 156 (1597), and accident, 156 (1465). It should, of course, be remembered that the mortality-standard for the social class (IV) to which these men are assigned is above the general average for some of these causes, particularly accident and respiratory disease, but this consideration does not help to explain their excess in total mortality, for which the Class IV rate hardly exceeds average, nor in mortality from cancer, for which the class rate is below

average. But the social class assignments are all individually open to criticism, being of necessity arbitrary; and if in this instance Class V would have been more appropriate, a good deal of the excess mortality of these horse-drivers may be accounted for by their social rather than their occupational environment.

113. *Motor Drivers*, who are chiefly men in the prime of life, return death-rates below average at all ages 20-70, their C.M.F. being 862. Their mortality is below average from almost every cause, as that of horse drivers is above it, the only causes in Table C for which their death-rate exceeds that of horse drivers being appendicitis and suicide. Their death-rate from respiratory disease is only half that of horse drivers.

114. *Tram Drivers* may be regarded as one variety of motor drivers, whom they greatly resemble in general mortality experience (C.M.F. 875). But it may be noted that their accident risk is very much less (ratio 260).

115. *Omnibus and Tram Conductors*.—Total mortality is just under average (C.M.F. 990), and from 20 to 70 the rates keep close to the mean. The causes of death in chief excess are phthisis (134, 1419), cancer (148, 1322), and appendicitis (166, 2213). As for tram drivers, the accident risk is very small (ratio 280).

116. *Grooms and Horse-keepers* are of over average age, their proportions (per 1,000 at all ages) being below those for all occupied males at each age under 35, and above them at all later ages (Census 1921, General Report, Table L). Their mortality does not differ much from average at any period of life, the general result being slight excess (C.M.F. 1,046). There is moderate excess of mortality from respiratory diseases (chiefly pneumonia), but not from phthisis, also from suicide and accident (accident position 126, but ratio only 1,034), but on the whole there is little calling for comment in their cause mortalities.

117. *Bargemen and Boatmen* are of over average age, their proportions (per 1,000 at all ages) being low at all ages under and high at all over 35. Their death-rate is in considerable excess at every age, the general result being a C.M.F. of 1,290. Causal mortalities are generally high, diabetes, digestive diseases, and suicide being the chief exceptions. The accident risk is very high (position 174, ratio 2,972). Of the 113 deaths from accident 77 were due to drowning.

118-120. *Dock Labourers*.—Of these stevedores and coal boat loaders and dischargers, about 5,000 and 7,000 men, have been tabulated separately from the main body of 93,000 "Other Dock Labourers." But the mortality characteristics of all three are very similar, the resemblance consisting in excess at all ages and from most causes. There is no age at which the death-rate of any of the three does not considerably exceed the general average, but excess is greatest, at all ages over 25, for stevedores, whose C.M.F. is 1,619, as against 1,231 for coal boat workers and 1,532 for others. Presumably the confined spaces in which the stevedore works in the holds of vessels increase his risk. And similarly large excess of mortality from most causes is the prevailing experience of all three groups, particularly from syphilitic diseases, cancer, circulatory and respiratory diseases (especially pneumonia) and accident. For these six causes the best position occupied by any of the three groups is 135 (ratio 1,277) by stevedores for circulatory disease. Phthisis might be added, but that excess for the coal boat men is slight (position 91, ratio 1,018). It is about 100 per cent. for stevedores and others. The antagonism between coal and phthisis, strongly manifested for miners in former reports, and still to some extent in 1921-23, seems to extend to these workers, in preventing large excess for them as for the others. The cancer excess does not appear to be specially related in a significant degree to any of the sites distinguished.

121. *Messengers, Hall Porters, Lift Attendants &c.* are chiefly boys, most being under twenty years of age. Mortality tends to excess at most ages, especially in early life (C.M.F. 1,200), and the distribution by cause of this excess, phthisis and valvular heart disease taking a prominent share in it, is consistent with the view that this may, as a light occupation, attract entrants of poor physique. The only causes of particularly low mortality, diabetes and appendicitis (positions 17 and 27, ratios 434 and 360), are fatal chiefly to classes more prosperous than those from which these workers are derived.

122. *Porters* are men of about average age. Their mortality exceeds the mean at all ages, especially the earlier, and their C.M.F. of 1,497 is exceeded by only 17 occupations. The excess is general, applying to every cause in Table D except diabetes, cirrhosis of the liver, and chronic nephritis. Amongst the heaviest excesses are those from phthisis and respiratory disease. In these respects porters conform to the characteristics of their social class (V).

123. Proprietors and Managers of Wholesale and Retail Dealing Businesses.—As about 80 per cent. of these men are engaged in retail distributive trade (Census 1921, General Report, page 113) they may be referred to as shopkeepers. Three groups have been distinguished, with a view to measuring the differences in mortality accompanying different conditions of retail trade. These are—(a) those whose trade is generally carried on under conditions involving for them and their assistants exposure to the open air (fish, meat, greengrocery and milk trades), (b) grocers, and (c) drapers. Together these three groups include just under half the total, proportions per 1,000 total shopkeepers being—Open shop, 229; grocers, 159; drapers, 109; others, 503. Corresponding proportions for shop assistants are 265, 235, 128, and 372 respectively. As such large proportions of the totals are outside the groups no correspondence between total and group figures can be looked for.

After considerable excess in early life (under 25) the mortality of shopkeepers keeps close to average at higher ages. But the rates at 16–20 seem to be overstated for all three groups. At this age the demarcation between dealing businesses and various other callings (*e.g.*, hawkers, newspaper sellers) must often be indistinct, with corresponding risk of want of correspondence between the census and registration data. The C.M.F. is 1,029. It is much higher (as also that of shop assistants) for men working in shops involving exposure to the weather (fish, meat, greengrocery, milk) than for indoor workers (grocery and textiles). There are no exceptions to this rule between the ages of 20 and 65. The causes from which mortality is shown by Table D to be in greatest excess for shopkeepers as a whole, are diabetes (ratio 1,484), digestive diseases (1,287), cirrhosis of the liver (2,042), chronic nephritis (1,287), and suicide (1,621). Each of these excesses applies to each of the three groups of shopkeepers except that from diabetes, which is confined to the food trades (ratios 1,828 for butchers, &c., and 1,770 for grocers, while that for drapers is 803). This distribution accords with the social incidence of diabetes mortality in later life (*see* Diag. 3), which also suggests association with abundance of food supply. Apart from the suicide excess, which may be attributable to business worries, the causes in chief excess are all of such a nature as to suggest good living as an important factor. Phthisis mortality is below average for each of the three groups (and above average for their assistants). Contrary to what might perhaps have been anticipated, mortality from respiratory disease is higher for the group of shopkeepers selected as subject to open-air conditions (butchers, &c.) than for either of the others, ratios for them and for grocers and drapers being 1,133, 792 and 790 respectively (Table D). The same statement applies to their assistants, the three ratios in their case being 1,361, 774 and 887, so the conditions of work in the exposed shop seem to entail a respiratory risk, which for butchers', &c., assistants is nearly double that for grocers' (ratios 1361 and 774).

124. Salesmen and Shop Assistants.—Mortality is lower at almost every age than that of shopkeepers, the C.M.F. of 973 comparing with 1,029. But the open shop (fish, meat, &c.) workers' rates are higher at every age over 35 than their employers', their C.M.F. of 1,280 being also considerably greater. The C.M.F. for drapers' assistants (1,069) is also considerably above that for their employers (941), but the excess in their case occurs earlier in life (20–55). There is little difference between the rates for grocers and their assistants (C.M.F. 955 and 932), but the assistants have lower rates at all ages over 45. So the elderly employee suffers in the open shop and gains in the grocery shop, as compared with his employer. The causes of mortality on the whole resemble those for shopkeepers. Diabetes is in excess for all, the C.M.F. for butchers', &c., assistants, being more than twice the average, and that for grocers' assistants almost twice. But for drapers' assistants the excess is under 30 per cent. So the same association of diabetes with the food trades may be noted for shop assistants as for their employers.

It may be noted from the above statement that as the mortality of assistants in fish, meat, etc., shops (124*a*) and in drapery shops (124*c*) forming together almost 40 per cent. of the whole number of shop assistants, is considerably above that of their employers, and the rate for grocers' assistants (124*b*) less than one-quarter of the whole, but little below their employers' rate, the rate for the unclassified assistants who make up the total must be very much lower than that for their employers. That this is so appears from the following statement of C.M.F.s. and age mortalities:—

123 Shopkeepers.									124 Shop Assistants.									
C.M.F.		20-65	16-	20-	25-	35-	45-	55-65	...	C.M.F.		20-65	16-	20-	25-	35-	45-	55-65
<i>a</i>	...	1,175	486	462	485	726	1,289	3,094	...	1,280	283	381	442	810	1,485	3,498		
<i>b</i>	...	955	1,105	391	354	480	1,118	2,668	...	932	252	324	416	731	1,016	2,170		
<i>c</i>	...	941	556	322	352	585	1,033	2,586	...	1,069	288	374	400	729	1,307	2,604		
Others	...	1,008	421	448	413	651	1,152	2,486	...	728	213	281	269	487	909	1,743		
All	...	1,029	490	433	416	634	1,163	2,647	...	973	250	329	366	658	1,156	2,443		

At each age distinguished mortality is shown as lower for the unclassified assistants than for any of the three classified groups. It is also lower at each age for unclassified assistants than for their employers. These facts seem to suggest possible understatement of mortality for unclassified shop assistants, which would presumably imply compensatory overstatement of the aggregate mortality for the three classified groups.

Excess of Mortality at an Earlier over that at a Later Age.—It will be noticed that mortality is shown as lower for shopkeepers at 25–35 than at 20–25, and at 20–25 than at 16–20. Corresponding reversal of the general rule of increase of mortality with increase of age is displayed only by the unclassified amongst the shop assistants, and only as between ages 20–25 and 25–35. In this respect shopkeepers display in special degree a tendency which applies to the total population of many countries, as is shown by their life-tables, and which has been shown by the Government Actuary in his recently published Life Tables for England and Wales, 1920–22 (Registrar-General's Decennial Supplement, Part I) to apply to the experience of both sexes as a whole in the rural districts of the Eastern Counties. It therefore appears that certain sections of the English population, geographical or occupational, display a feature which in many other countries applies to the total mortality experience, though it has never done so here. This being so it may be of interest to note which are the occupations so affected, and which are the causes of death chiefly responsible.

Scrutiny of the age mortality rates on pages 5–95 shows that the death-rate was higher at 16–20 than at 20–25 for the occupation groups bearing the following numbers—3, 6, 17, 21, 30, 45, 55, 62, 63, 80, 84, 95, 97, 105, 107, 108, 114, 115, 117, 118, 119, 123, 132, 146 and 151; and at 20–25 than at 25–35 for the groups numbered 4, 9, 10, 19, 20, 21, 24, 25, 26, 35, 39, 41, 44, 49, 51, 52, 56, 57, 58, 61, 66, 68, 72, 73, 76, 77, 78, 83, 85, 88, 93, 101, 104, 107, 109, 111, 114, 121, 123, 131, 137, 138, 139, 141, 142, 143, 144, 149, 154, 157, 160 and 162. The rate for 22,982 youths of 16–20 was higher than for 67,568 aged 20–25 in the same occupations; and that for 122,856 men of 20–25 than that for 321,928 of 25–35. The occupations included in these lists may be seen to be of a very varied nature, but shopkeepers form numerically much the most important single occupation concerned. When the causes of death are compared for the two age groups in each case it is seen that, as has generally been supposed, tuberculosis accounts for this phenomenon as between ages 20–25 and 25–35, though it does not account for the excess for age 16–20 over 20–25. For the selected occupations compared total mortality at 20–25 amounted to 454 per 100,000, and at 25–35 to 388. Of this excess of 66 per 100,000 63 was due to tuberculosis, the rates for the respiratory form being 175 at 20–25 and 120 at 25–35, and for other forms 22 and 14 respectively.

But the picture is quite different when ages 16–20 and 20–25 are compared. The total rate for the first is 438 per 100,000, and for the second 296, a difference of 142, of which tuberculosis accounts for only 15, the 16–20 rates for respiratory and other forms being 133 and 22, and those at 20–25 123 and 17. The remaining difference of 127 per 100,000 is made up as follows—accident, 45 (71–26); pneumonia, 22 (44–22); appendicitis, 10 (19–9); valvular disease, 7 (15–8); acute nephritis, 9 (no deaths at 20–25); miscellaneous nervous diseases, 8 (20–12); miscellaneous digestive diseases, 3 (6–3); and unclassified ("other") causes, 18 (39–21). It thus appears that while the feature in question at about age 25 is almost entirely accounted for by tuberculosis, the causes tending in the same direction at about 20 are very miscellaneous, accident being much the most important. This fact may be compared with Diagram 5 of the *Statistical Review* for 1925, which shows that mortality from accidental drowning is enormously and suddenly reduced between 20 and 25 years of age, so that the prudence required to avoid accident appears to be a faculty somewhat suddenly acquired at about this time of life.

While the facts noted above probably suffice to establish a variation with age in the causes responsible for the feature studied, the possible influence of ill-health upon the selection of occupation must be remembered. The actual decrease of mortality with increase of age in the selected occupations compared may not be typical, as regards the causes responsible for it, of such tendency in the same direction as applies to the population at large. This might also, of course, hold good for geographical sections of the population. No section of the population, indeed, occupational or geographical, which is subject to the influence of selective migration, can be looked upon as typical in this matter of a general tendency. Tuberculosis may account for the excess mortality of the selected occupations at 20–25, either because young men suffering from phthisis select these as suitable for them, or because of special occupational risk of phthisis resulting in early death, or for both reasons, but in neither case does the early excess represent the emergence of a

general tendency. And in the same way similar early excess for the rural districts of the Eastern Counties may be accounted for by migration, either inward of invalids attracted by the "bracing" characteristics of their climate, or (and probably chiefly) outward migration of healthy adolescents, leaving those debarred from enterprise by disease to die at home. (See *Statistical Review* for 1923, Text, page 34.) The case is evidently different where a whole national population, not greatly affected by migration, displays the same peculiarity. In this case if tuberculosis mortality, as at present for females in England and Wales, reaches its highest point in early adult life, its relative importance amongst the forms of mortality at this time of life may suffice to impress this maximum upon the total mortality curve. But if, as for the male English population at present, there is no such early adult tuberculosis maximum, it is evident that the cause of the phenomenon must be sought elsewhere. Where, as in this country at present, the feature in question applies only to sectional populations, migration furnishes an obvious explanation, even though the causes accounting for the early excess in the selected populations may profitably be studied for the sake of the light they may throw upon possibilities elsewhere, and latent tendencies here.

125. *Commercial Travellers*.—Except at 16-20, when the numbers are small, mortality is slightly above average at every age, the C.M.F. being 1,108. The causes chiefly in excess bear general resemblance to those for shopkeepers, including diabetes (ratio 1,590), digestive diseases (1,407), cirrhosis of the liver (2,146), and suicide (1,514). But in addition to these excesses shared with shopkeepers, commercial travellers suffer heavily from syphilitic diseases (1,642), cancer (1,228—a considerable excess as compared with the class II ratio of 920), and appendicitis (1,989). It would seem that the temptations of the calling to intemperance in food and drink are not without effect upon its mortality. Their ratios for chronic nephritis (1,174) and cerebral hæmorrhage (1,107) are also in some, though less, excess.

126. *Canvassers, Roundsmen and Van Salesmen*.—Mortality is low, their C.M.F. being 877, and death-rates being below average at all ages over 35 and from almost all causes.

127. *Costermongers*, itinerant vendors of goods, working on their own behalf, instead of for employers like the canvassers, furnish an interesting contrast. Mortality is in excess at all ages, especially in middle life, 25-55, the C.M.F. being 1,660 as against 877 for canvassers. It is also in excess from almost all causes, especially phthisis (ratio 2,289), syphilitic diseases (2,284), and respiratory diseases (2,186). The ratio is higher for bronchitis (2,690) than pneumonia (1,979), but the significance of these excesses is much the same, the bronchitis position being 168 and that for pneumonia 169. Next to these causes come circulatory disease (1,551) and cirrhosis of the liver (1,573). Other excesses are quite moderate, but the only causes in Table D with ratios under 1,000 are diabetes (943) and appendicitis (607), both causes of low mortality for the social class (V) to which costermongers are assigned.

128, 129. *Bank and Insurance Officials* form the higher grades of the banking and insurance staffs, of which the majority is constituted by group 158a, bank and insurance clerks. It is therefore not unlikely that the tendency to magnification of importance in the census records of occupation, discussed as a possible factor in the consistently low mortality of foremen, may contribute to the advantageous position recorded for bank and insurance officials. The C.M.F.s are 603 and 585 respectively, yielding the positions of 4 and 3, lower rates being returned only for farm bailiffs and Anglican clergymen. In each case, as also for clergymen, the C.M.F. is a little lower than the ratio of actual to calculated deaths, the discrepancy being greatest for bank officials (603 and 66). This must be due in part at least to the fact that there is no recorded mortality for any of these three occupations in the first one or two age groups (16-20 and 20-25), population, if any, at such ages being naturally very small—a circumstance which applies to other professions as well as the clergy, and reduces the C.M.F. but not the alternative measure. But the close general correspondence of the two measures of total mortality, as shown side by side in the Abstracts, shows that danger of understatement of mortality by the C.M.F. from this cause must be slight.

Both bank and insurance officials share the Class-I peculiarity of very low relative mortality in the earlier working years, which gradually increases with age to a rate much nearer the average in later life (Diag. 1). Table D shows that the only causes in excess for either occupation are digestive diseases and diabetes, the former as a whole only for bank and the latter only for insurance officials. The special incidence of both these forms of disease on the upper social ranks, presumably as the result of a generous food supply, is discussed on pages xxxi and xli. The cause in greatest excess for both groups is appendicitis, which also shows

more than any other the upper social class excess characteristic of digestive and related diseases (Diag. 3). Mortality from phthisis, cancer, and bronchitis, all causes of the opposite type of social grading to diabetes and appendicitis, *i.e.*, increasing from above downwards, is extremely low for both groups; and no other occupation returns so low a rate as insurance officials from valvular disease of the heart, another extreme example of the same type. There is a curious contrast between the two groups as regards cirrhosis of the liver (bank officials, position 141, ratio 1,521, and insurance officials, position 56, ratio 521). But the six deaths at 20-65 in the former case are barely sufficient, and the three in the latter insufficient, to yield significant rates.

130. Insurance Agents and Canvassers.—In this case it is fairly obvious from Table A that many canvassers describe themselves on their census returns as agents or brokers, so the two lines are merged for present purposes. Mortality is excessive in early life, but the excess rapidly lessens as age increases, and after 45 disappears. Perhaps it may be inferred from these facts that this light open-air occupation attracts men of poor physique, who benefit as time goes on by its healthy nature. This surmise is supported by the phthisis mortality experience. At 20-65 this is high (position 142, ratio 1,569), but the excess is largely confined to early life. Under 35 it is very great, at 35-55 moderate, and after 55 phthisis mortality is well below the average. Mortality from respiratory disease is rather low (57, 815), and the only cause except phthisis in notable excess is suicide (144, 1,358).

131. Auctioneers.—The C.M.F. is 1,031, and mortality, generally speaking, about average throughout life. Its distribution by cause is very similar to that noted for bank and insurance officials, and especially for commercial travellers. Low phthisis and respiratory, and high diabetes and digestive disease mortality are features shared with Class I as a whole, but others shared with commercial travellers are high rates for syphilitic diseases (146, 1376), cirrhosis of the liver (161, 2302) and suicide (166, 1712), and a rate above the high Class I average for appendicitis (169, 2393).

Causes of Death affecting Business and Professional Men.—Probably the combination of causes just noted may be accepted as to some extent characteristic of business life (of moderate prosperity) in general. This may be tested by selecting certain occupations as representative of business life and examining their mortality from the causes discussed. The following six occupations have been used for such a test: Shopkeepers, commercial travellers, bank and insurance officials, auctioneers, and theatre, &c., proprietors. Mortality from each cause being classed as light or heavy according as it was less or more than that of the majority of the 178 occupations dealt with, the six business groups give the following results: phthisis, all light; respiratory disease, all light; diabetes, all heavy, except bank officials; digestive diseases, all heavy; appendicitis, all heavy; cirrhosis of the liver, all heavy, except insurance officials; syphilitic diseases, suicide (and chronic nephritis), four heavy, bank and insurance officials light. It is true that this distribution of mortality is largely that of the upper and middle classes in general, but a corresponding group of professional occupations (Anglican clergy, barristers, solicitors, medical practitioners, dentists, and engineers) conforms less closely to the type described for six of the above nine causes, equally for two, and to a greater extent for only one, suicide.

132 and 133. Civil Service and Local Authority Officials and Clerks.—Both groups are of less than average mortality at every age, the C.M.F. of civil servants being 739 and of the local officials 776. The causes of death met with are on the whole of the middle class type noted above, mortality from phthisis and especially respiratory disease being low for both groups, and that from diabetes slightly over average, but civil servants suffer less than the general population from all forms of digestive disease, and local officials only slightly more, and the death-rates of both from syphilitic diseases and from suicide are below average. Both groups are naturally of very diverse social position, as indicated by their inclusion in Social Class II, so it is natural that the causal distribution characteristic of Class I is less clearly shown by them than by either the business or the professional combinations just discussed.

134. Church of England Clergymen.—The C.M.F., 561, is lower than for any other of the 178 occupations in Table B, except farm bailiffs, the reliability of whose death-rates shares the suspicion attaching to those of foremen in general. So it may well be that the rate for the clergy is really lowest of all. It is, of course, like those for other registered professions, singularly free from uncertainty as to the comparability of deaths with population. In these cases every member of the calling is inscribed in a professional register, such inscription

governing within narrow limits both the return of numbers living and of deaths. So the exceptional healthfulness of the clerical calling is attested by exceptionally strong evidence. It is displayed at all ages, though, as noted on page 121, the clerical advantage is lessened after 65, with the near approach of the natural termination of life. The causes of death are compared with those for other clergymen below.

135 and 136. Other Clergy.—These will, for convenience, be referred to as priests (R.C.) and ministers. Both resemble the Anglican clergy and social Class I in general, in returning very low mortality in early manhood, with subsequent gradual approximation towards the average, which, however, is never reached, as life advances. The C.M.F.s compare as follows: Anglican clergy, 561; ministers, 639; priests, 780. All three clerical groups manifest the middle class characteristic of low phthisis and respiratory mortality (both lowest for ministers), but ministers alone of the three have more than the average death-rate from digestive diseases (their appendicitis ratio is 2,315). Cirrhosis of the liver is low for all three, but chronic nephritis (ratio 1,733) and cerebral hæmorrhage (1,247) are well above average for priests, though low for the other two. Pneumonia also is slightly above average for priests though very low for Anglican and other clergy. Cancer mortality is low for all, the ratio for ministers, 493, being the lowest recorded for any of the 178 occupations. Priests and ministers share the high diabetes mortality of their social class, but Anglicans escape it (ratio 779). No other occupation (except six with no deaths) records so low a ratio for syphilitic diseases as the highest (114, Anglican clergy) returned by the three clerical groups.

137. Barristers.—The C.M.F., 1,171, differs to an exceptional extent from the ratio of recorded to calculated deaths, 107. This is largely due to the fact that a death happened to occur amongst the 102 barristers aged 20–25, the exceptionally high death-rate at this age of 980 per 100,000 resulting, which Table B shows to be 278 per cent. of average. But the same table shows that all age rates were in excess up to 65, so there appears for some reason to have been real excess of mortality in this occupation. The Class I causal distribution of mortality is manifested in its extremest form by barristers, with the following record: phthisis, position 2, ratio 247; respiratory disease 24, 692; digestive disease 178, 4795. So only one occupation (building foremen) returns a lower death-rate from phthisis, and no other returns so high a rate from digestive diseases. This latter statement is seen from Table F to apply also to peptic ulcer (not a Class I feature) and appendicitis, while high rates are recorded also for chronic nephritis (156, 1629) and circulatory disease (173, 1815).

But the peptic ulcer and digestive diseases position is mainly due to one death from duodenal ulcer at 20–25, the small population at this age yielding a very high mortality. Omission of this death reduces the peptic ulcer C.M.F. from 172·6 to 24·6, and the digestive disease C.M.F. from 285·3 to 137·3. Even these reduced rates, however, are high, the resulting positions being 148 and 175. And the record of 178, 5933 for appendicitis is based not on one death but on five, so there can be no doubt as to the reality of excess from this type of mortality.

The diabetes experience of no mortality at 20–65 is not in reality so much opposed to the Class I tendency to excessive mortality from this cause as it may appear to be, for the excess applies almost entirely to later life (Diagram 3), and 5 deaths at ages over 65 are ignored in the calculation of the C.M.F. Much the same thing has happened with cancer of the stomach, for which the C.M.F. is also nil, notwithstanding high mortality (130, 1220) from cancer of all sites, and the exceptional mortality from diseases of the digestive system. But there were three deaths at ages over 65.

138. Solicitors.—Mortality is well below average in early and late life, the C.M.F. being 899, but slightly exceeds average at 45–55. The causal distribution conforms to the general Class I type, rates for phthisis (ratio 526) and respiratory disease (800) being low, and those for digestive diseases as a whole (1,412), appendicitis (1,876), cirrhosis of the liver (2,729), and suicide (1,654) high. But the diabetes ratio is only 943.

139. Medical Practitioners.—Mortality does not depart far from average at any time of life, the general result being a C.M.F. of 1,021. The causes of death conform on the whole to the Class I type, but depart from it in one or two directions which the occupational environment may explain. Along with the usual low phthisis mortality (11, 462) are found rather high rates for influenza (141, 1277) and respiratory disease (90, 1015). The latter is due to pneumonia (149, 1456), for bronchitis, (16, 300) is very low. So acute non-tuberculous respiratory diseases, influenza and pneumonia, seem a special risk for the doctor, easily to be explained by the conditions of his calling. The same explanation may apply to the accident ratio of 1,659, which

is more than double that of Class I as a whole. The other features of medical mortality are for the most part those of Class I in general. These include high ratios for diabetes (1,557), digestive disease (1,592), appendicitis (1,573), cirrhosis of the liver (1,854), and suicide (2,012). Another characteristic feature of Class I mortality, specially well marked for doctors as for some of the other professions and higher-grade business occupations (particularly bank and insurance officials), is high proportion of "other" to valvular heart disease (Table C). For the population at large these are almost equal; for Class I "other" is almost double valvular disease; and for doctors, who presumably have access to the best means of diagnosis, nearly treble. This is due almost certainly to difference in nomenclature rather than in disease, valvular disease being diagnosed for Class V on evidence which would not pass muster in Class I practice (see page xxxiv). The evidence which was at one time held to justify a diagnosis of valvular disease is now no longer accepted as doing so, and the change of view has naturally affected Class I practice more than Class V.

140. *Dentists*.—Mortality is lower than for medical practitioners, the C.M.F. of 910 comparing with 1,021. The special doctors' risk from respiratory diseases (pneumonia) and accident does not apply to this indoor occupation, but, on the other hand, phthisis mortality (ratio 753) is considerably higher. The usual Class I excess for diabetes and for digestive diseases is greater for dentists than for doctors. Their ratio of 4,125 for cirrhosis of the liver is exceeded by only five occupations.

141. *Teachers (not music teachers)*.—High mortality at 16–25, followed by consistently low rates at all subsequent ages (Table B), probably indicates that youths of poor physique are attracted to this as a light and healthy occupation. Its healthiness is attested both by mortality rates which after 25 never exceed 82 per cent. of average, and by a C.M.F. of 736, holding sixteenth place on the list. Mortality is low from almost all causes, the only ratios in excess of 1,000 being influenza 1,071, diabetes 1,164, and appendicitis, 1,079. That for respiratory disease (10, 468), is especially low.

142. *Music Teachers*.—Excess of mortality in early life is greater and more prolonged than for other teachers, lasting from 20 to 45, while all the later rates exceed those for other teachers, with the result that the music teachers' C.M.F. ratio of 1,096 (position 108) is in sharp contrast with that of 736 (position 16) for other teachers. The explanation of high early mortality suggested for teachers probably applies with greater force to music teachers. It is supported for both occupations by the fact that mortality from phthisis is in large excess at the same ages as total mortality, though at later ages, and considered as a whole, it is below average (C.M.F. ratio 931). Music teachers suffer much more than others from respiratory disease (143, 1477), chiefly pneumonia. This may be accounted for by greater exposure, as suggested in regard to the similar contrast between medical practitioners and dentists. High ratios are returned also for syphilitic diseases (1,646), diabetes (1,533), cerebral hæmorrhage (1,526), and cirrhosis of the liver (1,542).

143. *Civil Engineers and Surveyors*.—Low rates at all ages yield a C.M.F. of 752. Mortality in large measure conforms to the usual Class I type, with low rates for phthisis, cancer, and respiratory disease, and high for diabetes (ratio 1,467) and cirrhosis of the liver (1,313). But that for digestive disease is slightly below average.

144. *Architects* (C.M.F. 929) also conform in general to the mortality characteristics of their social class. Ratios are low for phthisis (713) and respiratory disease (794), and high for digestive disease (1,526), appendicitis (2,483), cirrhosis of the liver (1,396), and (slightly) for diabetes (1,156). The accident ratio is only 347, notwithstanding exposure to risk on buildings. The cancer rate departs from the usual Class I experience in being over average (ratio 1,095).

145. *Authors, Editors, Journalists*.—Mortality is quite low up to 35, 60–65 per cent. of average, but later on the ratio rises sharply, reaching a maximum of 120 per cent. at 45–55. The C.M.F., 1,003, or practically average, shows the mortality in a less favourable light than its position of 77, indicating that 101 occupations return a higher rate (see page liv). The most noticeable feature in regard to the causes of mortality is a high rate for cirrhosis of the liver (172, 3042).

146. *Artists*.—These are men described as painters, sculptors, engravers, etc., but their number (8,509) suggests that these terms are used in a very comprehensive sense. Their mortality record includes no important departures from the general average at any period of life, and the C.M.F. is 1,005. The only outstanding causal feature is a high rate for syphilis, etc. (169, 1982), but the C.M.F. ratios for phthisis (1,029), respiratory disease

(1,024), and bronchitis (1,123) are high enough to confirm the suspicion that the group is of very mixed social constitution. This has been allowed for in its assignment to Class II.

147. Proprietors and Managers of Theatres, Entertainments, Sports.—Here the nature of the case involves a very varying type of man, ranging from the travelling showman to the theatre magnate. This is allowed for by assignment to Social Classes II and III. Mortality, low in early life (under 25), inclines to exceed the average later, though never greatly. The C.M.F. is 1,020. While the rates from digestive diseases (161, 1424) and appendicitis (159, 1921) are high, those from phthisis (80, 972) and respiratory disease (73, 912) are not low, so causal distribution does not conform to any social type. Other causes in excess are syphilis etc. (168, 1941), diabetes (159, 1779), and cirrhosis of the liver (165, 2438).

148. Actors.—Mortality is high after 25, reaching 89 per cent. excess at 65–70. The C.M.F. is 1,336. Outstanding mortalities are those for syphilis etc. (177, 4649), digestive diseases (174, 2197) and cirrhosis of the liver (174, 4646). The phthisis figures (141, 1533) are also fairly high. Here again causal distribution is mixed, like the social type.

149. Musicians.—Mortality is above average at each age over 20, but the greatest excess is only 39 per cent. at 35–45. The C.M.F. is 1,220. The social assignment, Class III, is confirmed by the type of mortality, rates being high from most causes, especially syphilis etc. (172, 2059), phthisis (133, 1385), respiratory disease (123, 1241), bronchitis (118, 1200), and cancer (163, 1505).

150. Domestic Servants (indoor).—The C.M.F. ratio, 885, is closely adhered to at all periods of life, mortality being a little below average at each. The rates from most causes are low, especially respiratory disease (23, 687). The highest are for appendicitis (143, 1506), and suicide (136, 1296).

151. Gamekeepers.—These are now very old men, the proportions in 1921 of their numbers at various ages to the total at all ages increasing with increase of age from 36 per cent. of the average for all occupations at ages under 20 to 187 per cent. at ages over 65. This is presumably a consequence of the war, for the total number of gamekeepers was reduced by 45 per cent. between 1911 and 1921. Evidently, decrease of demand for gamekeepers prevented young men from entering the occupation, so that with lapse of time the older men, included in the census of 1911, became an increasingly important proportion of the whole. The C.M.F. is decidedly low, though two of the earlier age groups record some excess. The excess (over average) of 22 per cent. at 70—may be compared with that of 32 per cent. for farm bailiffs, whose earlier record is more favourable than that of the gamekeepers (see page liv). The C.M.F. of 667 sums up the low mortalities at 20–65 (varying from 49 to 101 per cent. of average) in Table B, but if all ages are taken into account, and the mortality of all males used as standard, the mortality ratio is increased from 66·7 to 107 per cent. of average (Appendix A, Table c). The reasons against the procedure resulting in the higher ratio are discussed on pages 118–123.

Tables D and F show the mortality of these men as low from almost every cause distinguished. From three indeed, circulatory disease, respiratory disease, and pneumonia, it is lower than for any other occupation, the respective C.M.F. ratios (Table D) being 369, 281, and 157. The phthisis record (45, 772) is not nearly so favourable as that for non-tuberculous respiratory disease, but the only causes in noteworthy excess are diabetes (130, 1254) and suicide (150, 1465).

152. Inn, Hotel—Keepers ; Publicans.—The mortality rates are consistently high after 25, but chiefly at 35–55, when the excess over average approaches 100 per cent. The C.M.F. is 1,585. Excess is recorded for almost every cause, the ratios for five causes being over 2,000—diabetes (172, 2852), digestive disease (177, 3452), chronic nephritis (171, 2264), suicide (174, 2609), and cirrhosis of the liver (178, 11552). This list indicates very clearly that the publican yields to the temptations towards over-eating and drinking entailed by his business. The cirrhosis ratio is, indeed, almost fantastically high, the only other excess in Table D to compare with it being that of tin and copper miners from tuberculosis. Other noteworthy figures are those for phthisis (132, 1344), respiratory disease (135, 1348), pneumonia (157, 1611), cerebral hæmorrhage (165, 1768), and circulatory disease (165, 1529).

153. Barmen.—These are young men, their proportion (to total at all ages) being high at each age from 16 to 35 and low at all others. The age distribution of their mortality—high generally, but chiefly at 35–55—is discussed on page 122. The C.M.F., 1,955, is exceeded by only four occupations, all of high silica risk. Indeed, as in these four tin and

copper underground miners and cutlery grinders are each counted twice over, the barman's mortality is exceeded only by those of the two worst silica risk occupations, tin miners and metal grinders. Rates are very high from almost all causes, the only ratios below 1,000 in Table D being for diabetes and appendicitis, both diseases of a pronounced social distribution favouring the barman (*see* Diag. 3). Amongst the worst cause records are those for cirrhosis of the liver (176, 5833), digestive disease (175, 2308), circulatory disease (174, 1857), cancer (174, 1790)—*see* Table 5—syphilis etc. (173, 2137), chronic nephritis (173, 2571), cerebral hæmorrhage (167, 1875), phthisis (172, 2691), respiratory disease (159, 1904), and suicide (163, 1654). Even mortality from accident (133, 1132) is in considerable excess.

154. *Waiters*.—Mortality is in considerable excess at almost every age, the resultant C.M.F. being 1,323. Rates are high from most causes, the worst records being for cancer (178, 2003), syphilis etc. (176, 2598), cirrhosis of the liver (162, 2354), diabetes (160, 1803), phthisis (149, 1619), digestive disease (143, 1286), and respiratory disease (130, 1279). As the cancer C.M.F. is higher than for any other occupation (*see* page xxvii), its value as a measure of mortality has been assessed by the test employed in the Medical Research Council Special Report No. 99 (on occupational cancer in 1910–12). This was the ratio of actual deaths (A) to expected deaths (E), the test of significance applied being that $\frac{A \sim E}{\sqrt{E}}$ should equal at least 2. Estimating expected deaths at the rates for all occupied and retired males and taking all ages into consideration, the ratio obtained is 175 ($\frac{A \sim E}{\sqrt{E}} = 5.4$). This ratio is considerably below that of the C.M.F. 2,003, but if the C.M.F. ages, 20–65, are used, it becomes 200, with $\frac{A \sim E}{\sqrt{E}} = 5.8$. Thus, both measures of the cancer mortality of waiters give the same result, just as they are in close agreement in the abstracts for the total mortality of nearly all occupations, and the significance of the result appears to be of a high order.

155. *Laundry Workers*.—Mortality is below average at most ages, and the C.M.F. 893. Rates are low for most causes, the worst records being for suicide (143, 1337), cirrhosis of the liver (133, 1323), and pneumonia (118, 1155).

156. *Hairdressers*.—Mortality is above average at all ages under 70, the C.M.F. being 1,234. Rates are in excess for most causes, the worst records being for chronic nephritis (165, 1930), cerebral hæmorrhage (164, 1664), syphilitic diseases (156, 1605), cirrhosis of the liver (150, 1854), digestive disease (147, 1311), diabetes (140, 1402), and phthisis (137, 1451).

157. *Chimney Sweeps*.—Moderate excess of mortality at most ages yields a C.M.F. of 1,123. The causes in chief excess are cancer (167, 1544), phthisis (147, 1607), circulatory disease (154, 1380), and cirrhosis of the liver (140, 1500). The heavy death-rate from skin cancer (especially of the scrotum), over $11\frac{1}{2}$ times the average, is compared with other high occupational mortalities from this cause on page xxix.

158. *Clerks (not Civil Service or Local Authority)*.—At no period of life does the mortality of this large body of men depart far from average, its general trend being expressed by a C.M.F. of 1,019. Rates run lower in early life for railway, and especially for bank and insurance clerks, than for others, presumably in part at least as a consequence of the medical examination to which they are subject on entry into these services, but in later life this advantage is lost, and in old age (over 65) the rates for railway clerks are definitely in excess. Their C.M.F. of 920, however, like that of the bank and insurance workers (937), is appreciably lower than the general average, so their experience must be considerably better than that of the general mass of commercial clerks not in the employment of large public companies, though inferior to that of the civil service and local authority staffs. Mortality is not excessive from any cause, the worst records being for syphilis etc. (139, 1266), phthisis (120, 1241), and cirrhosis of the liver (122, 1115). Mortality from digestive disease is in some excess for all (clerks 111, 1099; bank and insurance clerks 122, 1151; railway clerks 130, 1183), and phthisis has a relatively worse record for all than respiratory disease, which is rather low (clerks 59, 819; bank, etc., 61, 848; railway 58, 817). The suicide risk is considerable (134, 1272) for bank and insurance clerks. The accident rate is low for all.

159. *Draughtsmen*.—Mortality is rather low at most ages, especially in early life, and the C.M.F., 894, is below any of those quoted for clerks. Rates are fairly low for most causes, influenza (136, 1212) and cirrhosis of the liver (122, 1115) being in most excess.

160. *Warehousemen*.—Mortality is not far from average at any age, and the C.M.F. is 1,007. Two special groups have been dealt with separately, textile, and dry goods (cereals, provisions, etc.) warehousemen. The latter are of much the same moderate mortality as other warehousemen (C.M.F. 1,039), though suffering in some excess from phthisis, cerebral hæmorrhage, digestive disease in general, and especially cirrhosis of the liver (157, 2031). But the textile warehouseman is subject to high mortality at all ages, the C.M.F. being 1,421. The causes in excess include phthisis (162, 2048), cancer (161, 1498), diabetes (168, 2328), and digestive disease (171, 1845). Respiratory excess is only moderate (125, 1251). The cause rates for warehousemen in general are on the whole very close to average, the greatest departure being for accident (30, 400). This is a low risk also for textile and dry goods warehousemen.

161. *Storekeepers*.—The work of this considerable body of men (37,596) is closely allied to that of the warehousemen, the chief difference in type being that the latter handle finished products in warehouses and the former keep and issue stores of tools, raw materials, etc., in factories and other works of production. Mortality is a little lighter than for warehousemen, the rates being very little above average up to 45 and somewhat more definitely below it later. The C.M.F. is 952. The cause rates in the main conform, being generally about, or rather below, average. Low rates for diabetes (28, 574), cirrhosis of the liver (19, 208), and chronic nephritis (19, 661) are the chief features of the cause mortality record.

162. *Packers*.—Mortality keeps fairly close to average throughout life, the chief departure being 23 per cent. excess at 35–45. The C.M.F. is 1,097. The occupational environment must, of course, vary greatly with the articles packed, and naturally there are no distinctive causal mortalities. Rates tend to be rather high all round, and the distribution is more that of the social class (IV) than of the occupation. Thus we may note somewhat heavy rates for phthisis (131, 1330) and respiratory disease (124, 1246), and low for diabetes (13, 328).

163. *Stationary Engine and Crane Drivers*.—The C.M.F. is 937 and none of the age rates depart greatly from average. There is a definite accident risk (148, 1337) but the rates for most diseases are below average. There is no heavy causal excess, and the favourable experience includes that from phthisis (49, 794), respiratory disease (45, 776), and cirrhosis of the liver (49, 458).

164. *General and Undefined Labourers*.—Care having been taken in 1921 to avoid the error* in census tabulation which in 1911 led to an apparent excess mortality of 183 per cent. for these men (see Supplement to 75th Annual Report, Part IV, page xx), their C.M.F. now comes out at the more credible figure of 1,438—44 per cent. excess. This excess is spread over the whole of life, varying in extent from 28 per cent. at 65–70 to 70 at 16–20. High mortality is natural to this group, for ill-health, misfortune, and unreliability of character must all combine to recruit its ranks. The only cause rates not above average in Table D are for the two diseases of chief special incidence upon the more prosperous classes—diabetes (64, 787) and appendicitis (58, 798). The chief excesses are also characteristic of Class V mortality in general—phthisis (151, 1650), respiratory disease (155, 1742), bronchitis (147, 1946), and syphilis etc. (160, 1686). Here again the occupational risk is very varied, and the mortality features are those of the social class, with its excesses accentuated by the factors referred to above. And similarly, the Class V advantage for diabetes, appendicitis, cirrhosis of the liver, and suicide (the only causes for which the Class V ratio in Table D is below 1000) is either reduced (diabetes and appendicitis) or annulled (cirrhosis and suicide) for general labourers.

OCCUPATIONAL FERTILITY.

Legitimate Fertility.

In the Annual Report of the Registrar General for 1912, tables (XV–XVII) were published showing the numbers of legitimate births during 1911 to men in each occupation distinguished in the census of 1911, with the ratios of these to all males, and to married males under 55 years of age, in each case. Illegitimate births were similarly related to unmarried and widowed females by occupation. This tabulation is repeated in Tables A and I for the births of 1921. For both years, the legitimate births have been assembled

* Classification as specialized labourers of men returned as general labourers, on the assumption that they were permanently associated with the industry in which they were at the moment employed in each case.

occupationally into the same social classes as used for occupation mortality (*see* page viii). Even though three large groups of workers were excluded in 1911 from the five graded classes which are now included in them (coal miners, textile workers, and agricultural labourers), the general lines of distinction have remained so much the same that it is of interest to compare the fertility record of each class in the two census years. This is done in Table 23.

TABLE 23.—*Comparison of Legitimate Fertility and Infant Mortality in Social Classes, 1911 and 1921.*

Social Class.	Legitimate Births per 1,000 Married Males under 55 years of Age.					Infant Mortality.				
	Rate in		Rate per cent. of that for all Classes.		Rate in 1921 per cent. of that in 1911.	Rate in		Rate per cent. of that for all Classes.		Rate in 1921 per cent. of that in 1911.
	1911.	1921.	1911.	1921.		1911.	1921.	1911.	1921.	
I. Upper and middle ...	119	98	73	70	82	76	38	61	48	50
II. Intermediate ...	132	104	81	74	79	106	55	85	70	52
III. Skilled workers ...	153	141	94	100	92	113	77	90	97	68
IV. Intermediate...	158	162	98	115	103	122	89	98	113	73
V. Unskilled workers ...	213	178	131	126	84	153	97	122	123	63
All classes ...	162	141	100	100	89	125	79	100	100	63

At both periods, fertility stated in this way increased continuously from Class I to Class V, being nearly twice as high in the latter as in the former, and for every class except IV it is shown as having fallen in 1921. This apparent exception is doubtless due to inclusion with the five graded classes of the three groups of workers previously excluded. Large numbers of coal miners and agricultural labourers, whose fertility is above the average, have been added to Class IV from this source, and it may be presumed that this change in classification accounts for the increase of the rate shown for Class IV. Apart from this, the general picture is one of all-round decline, notwithstanding the fact that the post-war wave of fertility, which reached its highest point in 1920, had not spent itself in 1921. Decline since then has been uninterrupted. In view of the changes between the two periods in occupational and social classification, it would be unsafe to attribute significance to the minor variations recorded.

Side by side with this social grading of fertility, Table A shows a similar grading of infant mortality, from 38 deaths per 1,000 births for Class I, to 97 for Class V. In 1911 it ranged from 76 in Class I to 153 in Class V. The reduction is greatest towards the upper end of the scale, but is very large for all ranks. Owing, however, to the changes in the scheme of social grading, as well as in the occupational tabulation on which it is based, only the major features of Table 23 can be relied upon. It is inserted only with a view to showing the broad tendency of the rapid changes in progress, without putting the reader to the trouble of referring to the earlier report.

Table A contains a statement of the same particulars as Table 23 for every occupation distinguished in the census report. Unfortunately, however, the measures of fertility employed are all necessarily unsatisfactory. Statement of occupation on the census schedules does not always correspond with that on the registers of births or of deaths. Thus, for instance, 12,064 married men under 55 were returned at the census simply as members of the then existent "Defence Force." But this description was not as a rule accepted by registrars, and was entered on only 65 birth certificates. This yields a fertility rate of 5 per 1,000, clearly seen to be impossible when compared with the general average of 141. Many other occupations are probably affected in a similar way. Pea and fruit pickers form a glaring illustration, only one father having been so described in birth registration. But other occupations of more importance than these, and the similar case of "out of work" (Order XXXI, page cxiv) must be similarly affected, if in less degree. Thus foremen, generally speaking, are shown as of low fertility and mortality alike. This probably implies that a number of men so return themselves at the census, whose claim to the dignity implied

breaks down on inquiry during registration. Machine shop foremen in metal working furnish an extreme example, with a fertility rate of only 27 per 1,000, or 19 per cent. of average. But the same tendency may be noted for other than manual workers. The fertility of company secretaries and registrars and of heads or managers of commercial office departments is suspiciously low, amounting for the latter to only 19 per cent. of average.

This want of correspondence between the census and registration returns of occupation has long been pointed out as a source of error in the tabulation of occupational mortality. But its effect has probably been increased by the recasting of the occupational classification. When this was largely industrial a motor car maker went to that heading, whatever his status, so classification was not affected by this consideration. Now, however, as in the cases quoted, status largely affects occupational distinctions, as of course in any attempt to distinguish the nature of the work actually performed it must, and the scope for this type of error is increased.

Errors of the kind just discussed apply, of course, to all methods of stating occupational fertility, but other considerations apply when a choice has to be made between the different measures employed in Table A. So far only the "crude rate per 1,000 married males under 55" has been referred to. If this is regarded as a fertility rate (*i.e.*, an index to the tendency to reproduction) it, of course, suffers from the defect of treating men of all ages alike, whereas the strong probability is that the wife of a man aged 25 is, by reason of her age alone, of much higher fertility than the wife of a man aged 50. But after all, the point of chief interest is not so much the variation in potential as in *realized* fertility, of the various occupations and classes. If we wish to compare their relative rates of increase (or decrease) by difference between births and deaths, age, within limits, and marital condition are immaterial, and all we require is the ratio of births to men of reproductive age, married or single. For from this point of view the effect is the same whether paternity is avoided by avoidance of marriage or by measures taken for the purpose after marriage. For this reason Tables XV–XVII of the Annual Report for 1912 show the ratios of births both to all males and to married males under 55 years of age. It would probably have been better to apply an age limit in both cases, as few children are born to men after middle life,* and certain classes and occupations are, by reason of their lower mortality, much more represented in later life than the average. But this point of view (total class or occupational fertility, irrespective of marriage) has not been catered for in Table A, which takes account only of married men and, therefore, aims at measuring fertility in proportion to opportunity. When this is the object in view, account should be taken of age, and column 11 of Table A represents an attempt to do so. But, unfortunately, it is the age of the wife which alone (to all intents and purposes, *see* 1911 Census Report on Fertility of Marriage, Part II, page xxviii) influences fertility, and it is the age of the husband alone which it has been possible to take into account. The husband's age is of significance as an index to the wife's, with which it is closely correlated (*see* same Report, page xii, Table III), but, unfortunately, the degree of this correlation varies greatly in different ranks of life (same Report, Table VII). From this table it may be estimated that the average difference in age between husband and wife in 1911 was 2·3 in Class V, and in Class Ia of the table (which substantially corresponds with Class I of the present scale) 5·3 years. These figures are only approximations, which cannot be expected to represent the facts with accuracy, as the information in the table does not suffice for this purpose. But the estimate has been made by the use of identical assumptions in each case, so the results are at least free from bias in intention, though perhaps not in effect, as between class and class.

For most of the couples dealt with in the table a definite relationship of age could be assumed on the basis of the information in the table itself. Thus, it was assumed that husbands aged 25–29 at marriage were exactly five years older than their wives of marriage age 20–24. This is almost certainly not the precise truth, but the assumption was accepted as impartial between class and class. But for other combinations of marriage age no definite difference in age could be assumed from the information given in the table. Where all we have given as to the husband's age is that he was married at 45 or over we can make no assumption as to the average excess of his age over that of his wife married at 30–34. This difficulty was met by ascertaining for such combinations the average difference for the marriages of less than one year's duration at census date of all classes, from the material in Table I of the Fertility Report. These differences were then assumed to apply in every case. Obviously such a method cannot be expected to measure average difference in age accurately for the classes compared. It probably tends to under-estimation of class contrast, for it seems likely that the class of greater average difference in age between husband

* 1911 Census Report, Vol. xiii, part 1, Table I.

and wife generally will also show greater than average interval of age between husbands married at say 45—and wives married at 30–34. If so, we are plainly under-estimating the average age difference for all marriages in Class I, and over-estimating it in Class V, by assuming that the difference in question (between marriage ages 45– and 30–34) is equal for the two classes. The contrast between the average Class I and Class V differences (5·3 and 2·3 years respectively) is therefore probably understated.

There is reason to believe that the method described under-estimates the actual differences, as well as the social contrast. For it yields a difference of 2·32 years for all classes jointly, and this figure can be checked. The actual differences are recorded in detail, but without distinction of social class, in Table III of the Fertility Report (1911). From this material it can be shown that the average excess of husband's age in 1911 was 3·42 years—a much higher figure than the estimate of 2·32 derived from Tables VII and I. It seems almost certain, therefore, that the real Class IA difference was appreciably greater than 5·3 years, though whether that for Class V was greater or less than 2·3 it is hard to say. In any case it must have been much less than for Class IA. The chief class peculiarity seems to be excess of difference for IA. Other differences roughly estimated in the manner described vary but little, and it will be noted the result for Class V (2·3) is the same as for the total population. This special IA excess presumably accounts for the overstatement of Class I fertility in column 11 of Table A (see below). A consequence of this class variation is that, as will shortly be explained, the correction applied in column 11 of Table A varies in its effect when applied to Class I and other classes and to occupations of varying social class.

The alternative measure employed in the table states legitimate births per 1,000 married males under 55 years of age. As a measure of actual reproduction this fails, as already pointed out, because of its restriction to married males, whereas the single and widowed, who might be married but are not, should also be taken into account. As a measure of fertility it is at fault because it largely leaves out of account the very important factor of wives' ages. But this could be properly allowed for only by a census tabulation, which has not been made, of the ages of the wives of men following different occupations. In so far as the point of interest in regard to occupational reproduction is its actual amount per head rather than its amount in proportion to opportunity (fertility), age is immaterial (except for the necessary exclusion of old men unlikely to have children), and by ignoring it the error is avoided which the use of the census fertility rates for husbands of varying age introduces. This arises from the fact that in Class I husbands tend to be considerably older than their wives and that this difference is less for the other classes. But the census fertility rates for males of different ages used for obtaining the entries in the column headed "calculated legitimate births" represent the average for all social classes. It follows that in dealing with Class I we are applying to men of any given age the fertility rate for men with considerably older wives, and so under-estimating their expected fertility. The standard with which their realized fertility is compared in column 11 is thus unduly low, and the resultant ratio of registered to calculated births, by which their fertility is measured, correspondingly overstated. The effect of this may be seen by comparing the social class entries in columns 11 and 13 of Table A. These ratios are as follows:—

					Col. 11.	Col. 13.
Class I	..	..	..	..	85	70
„ II.	..	..	..	..	85	74
„ III	..	..	..	..	97	101
„ IV	..	..	..	..	109	116
„ V	..	..	..	..	128	127

In Class I the ratio which allows for age is much higher than that which does not, but there is little difference for Classes III–V. In these classes the difference in age between husband and wife approximates to the average for all classes, so the husband's age is a good index to that of the wife, and the allowance for age is correctly made accordingly.

Both on account of this biased error in the col. 11 ratios, differentiating in favour of Classes I and II, and because of the preponderant importance of the point of view from which age is immaterial, the rates and ratios in cols. 12 and 13, corresponding with the similar rates shown in 1912 for 1911, may be regarded as the most satisfactory measure of occupational reproduction in Table A, but for the purpose of measuring fertility (the tendency to reproduction, as measured by achievement in proportion to opportunity) they require to be supplemented by the ratios in col. 11, which show up the cases where in this connexion age most requires to be taken into account. Thus, farmers' sons, who are naturally very young (married) men, show a ratio in col. 13 of 40 per cent., but in col. 11 of only 26 per cent. of average. Being young, they have also young wives, and the fertility to be expected of them is the higher on this account. Their registered births

were 26 per cent. of this appropriately high standard, but their fertility per 1,000 of all ages was 40 per cent. of average. By either form of statement their fertility is very low, but this is another matter. Most of these young couples presumably share the parents' home, a condition probably not conducive to fertility. On the other hand, the rate for farmers themselves, men of over average age (General Report, 1921 Census, Table L), and of whom less fertility is to be expected in view of their wives' ages, is much higher (123 per cent. of average), as stated in col. 11, where allowance is made for age, than in col. 13 (96 per cent.), where it is not. And this applies generally to occupations of over average age, including most in Class I. So part of the excess of the col. 11 ratios for this class over those in col. 13 is appropriate to the facts, though it is very largely due to special excess, for this class, of husbands' age over that of their wives, and so inappropriate to an allowance for age which should apply to that of the wife alone.

It is impossible to deal in detail with the occupational fertilities recorded in Table A, but a few may be referred to as illustrating the points dealt with, or otherwise of special interest.

The over-statement of fertility of Class I occupations in col. 11 is specially noticeable for barristers (131 per cent.) and medical men (110), corresponding ratios of total standardized fertility derived from Table XLVIII of the 1911 Census Fertility Report being 63 and 66.

When the source of this inflation is avoided by the method of statement employed in col. 13 these ratios are reduced to more credible figures, 131 to 95 and 110 to 79. On the other hand, the case of officers in the Royal Air Force illustrates the use of col. 11 as a corrective of col. 13 in certain cases. These were very young men in 1921—many of them, no doubt, quite recently married to young wives. Consequently, col. 13, taking no cognizance of this, credits them with fertility 50 per cent. above average, whereas col. 11, by allowing for their age, reduces the excess to 6 per cent. Army officers are shown as of high fertility by both methods of statement. Probably this was so in 1921, soon after demobilization, but it was far from being so in 1911, and is probably not so now (1927).

The fertility of all coal-mining occupations, except those of managerial rank, is rated higher in col. 13 than in col. 11. These men marry young, so the conditions of the R.A.F. officers apply to them also. The discrepancy is greatest for the conveyors of material to the shaft, who, as pointed out on page lvii, are very young workers indeed.

Quite incredibly high ratios are returned by both methods for consultant engineers—176 (col. 11) and 159 (col. 13) for those engaged in mechanical and electrical engineering, and 260 and 213 for those in mining engineering. The explanation in the latter case is known. It illustrates the danger of applying registration to census occupational data. Mining engineers of coal mines are allocated to the line "owners, agents, managers" of coal mines, and in the census tabulation this assignment can always be made, employment in a coal mine being stated under "industry." But the registrar may not always obtain this information in birth registration, and in its absence this mine employee is liable to be regarded as a consultant engineer, and the birth wrongly assigned to that occupation. The origin of the very high ratios (176, 159) for consultant mechanical engineers may be due to the description on the census schedule not stating or implying that the man was a consultant, whereas the registrar was able to ascertain that fact when the birth was registered.

The statements of fertility in Table A must therefore be admitted on various grounds to be unreliable, though the broader outlines of the picture presented may be accepted with confidence. Approximate accuracy in detail can be expected only by repetition of the specific census inquiry of 1911, by securing a record of the ages of parents in birth registration, or by census tabulation of the ages of wives of men of various occupations (see page vii).

Illegitimate Fertility.

The fertility of unmarried women, and the mortality of their infants, are dealt with in Table I. This shows the classes of women chiefly concerned. It does this by means both of a crude fertility rate per 1,000 women of all fertile ages (neglecting those under 16 and over 45), and of a ratio of registered to calculated births, similar to that employed in Table A. It is thus left to the reader to decide whether for his purpose age should or should not be taken into account. Although the natural fertility of women varies much with age, the fertility of the unmarried is governed so much more by social custom than by nature that the reasons for taking age into account are quite different from those applying to legitimate fertility. Although there are no registration data on the subject, it is believed that the proportion of illegitimate children born to women over 30 years

of age is far smaller than could be accounted for by natural decrease of fertility with advancing age. (The source of the rates employed to obtain the entries in col. 5 of Table I is indicated in a footnote to that table.)

Consequently, it is the differential risk at varying ages of non-compliance with social custom which is taken into account in cols. 5 and 6 of Table I, far more than the laws of nature, and it is for the reader to decide whether, from his particular point of view, the allowance for age in col. 6 is appropriate. Fortunately, the general indications of col. 6, where age is taken fully into account, are very similar to those of col. 7, where all fertile ages are dealt with alike. Thus the large groups of occupations dealt with range themselves in very much the same order, whether age is allowed for or not. In either case, the first six, in order of fertility, are mining and quarrying, agriculture, personal service, entertainments, manufacture, and transport, the first four of these alone being in excess of the general average by either measure. By either measure, also, the lowest rates are those for professional workers and clerks. As the numbers of women engaged in mining and agricultural occupations are small, the high rate for the numerous workers in personal service is the most significant feature of the table. The five occupations distinguished under this head all yield high rates in cols. 6 and 7, that for charwomen, 842 per cent. of average, being the highest for any occupation in col. 6, though the corresponding entry in col. 7, 32·0, is far exceeded by that for costermongers, 55·8. This of course implies that illegitimacy is much commoner amongst costermongers than charwomen, but that when allowance is made for the greater age of the latter, the scale is turned against them. The reader must choose for himself which measure to accept. Next to these two occupations come agricultural labourers, mine and quarry workers, rag bone and bottle sorters, and miscellaneous unskilled workers, all with rates in considerable excess of those for domestic servants.

By either method of statement the fertility of the unoccupied is somewhat higher than that of the occupied, the excess being rather greater when the greater age of the former (General Report on 1921 Census, Table LI) is taken into account.

OCCUPATIONAL INFANT MORTALITY.

Mortality of the Legitimate.

Table H provides an analysis by age and cause of the infant mortality recorded in Table A. It gives this information for the five social classes, and for a large number of occupational groups. These groups correspond largely, but not completely, with those employed in occupational mortality tabulation (pages 5-95). For this latter purpose the consideration regarded as deciding the grouping was the occupational risk involved for the men employed, and so men doing similar work are grouped together, even if their degree of skill and rates of pay are different. But it is these latter considerations which chiefly govern the social grading employed, and infant mortality is, of course, closely bound up with social considerations. Under urban conditions of life the better housing and care, which the higher wages of the skilled worker can purchase for his child, must give it a much better chance in infancy than the child of his unskilled and lower paid assistant. And in addition to the mere automatic effect of higher pay the superior intelligence—if it can be assumed to exist—of the class to which the skilled man belongs must operate through the wife and mother to the advantage of the child. For this reason the occupational grouping in Table H has been carried out on special lines, each group being restricted to one social class. Thus for the purposes of adult mortality tabulation boilermakers and their labourers form one group (No. 34), and rivetters and their labourers another (No. 43), but in Table H boilermakers and rivetters, both Class III, have been assigned to one group, and their labourers, Class IV, to another. Infant mortality in the second of these is considerably higher than in the first.

Turning now to the social class differences in mortality, we see that in each of the four sections of the first year of life distinguished, mortality increases without a break from Class I to Class V. The extent of this increase, comparatively slight during the first month, becomes much greater at higher ages, especially after the first month is over. Mortality in Class V compares as follows with that of Class I, taken as 100, for the four successive ages distinguished—158, 363, 412, 424. It follows from this increase in the excess of mortality for the lower social levels as age advances that the age distribution of infant deaths is very unlike at different social levels, the deaths caused by adverse environmental conditions during later infancy increasing in proportion from top to bottom of

the social scale. Taking deaths at all periods of infancy as 100 in each case, these are distributed as follows over the four sections of infant life in the five classes:—

	I	II	III	IV	V	All Classes.
0-4 weeks ..	61	51	44	41	39	43
4 weeks to 3 months	13	17	18	18	18	18
3-6 months ..	11	15	16	17	18	17
6-12 months ..	15	17	22	24	25	22
0-12 months ..	100	100	100	100	100	100

The deaths of the first four weeks are, of course, the least preventable, and it is at this period that infant mortality is falling least. Their importance as an element in the whole accordingly declines from a maximum in Class I to a minimum in Class V, while that of deaths at higher ages, especially 3-6 and 6-12 months, correspondingly increases. These figures show very clearly in what class of society and at what period of infancy further decrease of infant mortality must be sought. By far the most avoidable deaths are those occurring in later infancy amongst the poorer classes. But the difference between Classes I and V for the first four weeks show that there is considerable scope for improvement here also. This is confirmed, when causes of death are distinguished, by the differential mortality recorded for the developmental and wasting diseases to which the deaths of the first four weeks are almost entirely due. The two chief causes of mortality in this group record large and continuously progressive increases from Class I to Class V, premature birth from 11·9 to 21·1 and congenital debility from 2·3 to 8·5. It is the miscellaneous deaths grouped under the latter heading which are most preventable in early infancy. This is shown both by the fact that decline is occurring chiefly under this heading, and that class variation is at a maximum for it.

But the only other cause distinguished which contributes to the "developmental and wasting" total, though in less degree—congenital malformations—does not follow the same law of social distribution. Mortality from this cause is, as might be expected, very much the same in all classes, though, as will be seen when Table I is considered, there is some indication that if the mother is engaged in manual labour during pregnancy the risk of malformation fatal to the life of the infant is increased. But for legitimate infants, in whose case in general the importance of this factor must be small, mortality from this cause is practically the same in all classes, varying only from 3·8 in Class II to 4·0 in Classes III-V.

There are indeed a few exceptional rates to be noted for certain occupations which suggest that manual labour during pregnancy may sometimes influence even the mortality of legitimate infants recorded in Table H. The rate for textile workers as a whole, 5·5, is very high as compared with the average of 4·0 so closely adhered to by all social classes, and the high proportion of married women engaged in textile work is well known (*see* Census, 1921, General Report, page 133). This suggests a connexion for legitimate births between textile industry and malformation which is very evident for illegitimate in Table I, and which is shown also by the similar returns for 1911, when the textile figure of 4·6 stood out in the same way in contrast with rates ranging from 3·4 to 3·8 for the other seven classes then distinguished (Annual Report for 1911, Table 28B). And the highest rates in Table H, weavers 5·8, costermongers 6·1, textile foremen 6·2, clergy 6·3, boiler firemen and glasshouse workers 6·5, and textile breakers, hecklers, etc. 11·7, seven in all, include three textile occupations, one of quite outstanding mortality. Three of the others as well may all involve much work for the mother. This is obviously so for the costermonger, and the clergyman's wife (seven deaths from malformation out of 1,104 births) has many calls upon her energies. If the incidence of mortality corresponds with that of malformation the latter is practically the same in all classes, but if greater care in Class I prevents death, at least during infancy, from some malformations which would be fatal in Class V, it is possible that these congenital defects may be somewhat more frequent in the upper than in the lower ranks.

Whether this be so or not similar reversal of the general social grading applies to deaths attributed to injury at birth, which decrease from 1·8 per 1,000 births in Class I to 1·1 in Class V. The explanation which at once suggests itself, and will probably be accepted by most readers, is that births in Class V, being attended mainly by midwives, are allowed to take their natural course more frequently than those attended by medical men. But another explanation is theoretically possible. As the effects of cerebral injury during birth are often difficult to recognise as such it may be argued that the more skilled midwifery available for Class I recognizes the causation of a larger proportion of them than is recognized in Class V midwifery practice.

Mortality from tuberculosis increases from 0·6 in Class I to 1·9 in Class IV, falling to 1·7 in Class V. Although it was not till 1909 that this mortality came down to 4·0, the century having started with 6·4 in 1901, there are only five occupational records for 1921 exceeding 4·0, of which the highest (for woollen scourers, &c.) is 4·7.

Diarrhoeal mortality has a wide social range, from 4·2 for Class I to 18·5 for Class V, exceeded only by that applying to respiratory disease. The highest rates returned are those for costermongers, 29·3, and brick and pottery kiln and oven men, 36·4.

Judged by the evidence of Table H, the most preventable deaths of infants are those from respiratory disease. The mortality ascribed to bronchitis increases from 0·7 for Class I to 6·5 for Classes IV and V, and that to pneumonia from 2·6 (Class I) to 12·4 (Class V). This does not, of course, imply that under the present conditions of life applying to the various classes, increase of knowledge and care on the part of Class V mothers could reduce their infants' death-rate to the Class I level. This may be impossible without Class I housing and other hygienic conditions dependent on finance, but the comparison leaves little doubt that greater care could prevent many of the working class infant deaths ascribed to these causes. Some of the highest bronchitis rates are 12·0 for shipyard labourers, 12·7 for ironfoundry furnacemen and labourers, 12·8 for boilermakers, platers' and rivetters' labourers, and 15·9 for unskilled textile workers. These are all Class IV occupations, of such a nature as to involve home life in a smoke-polluted atmosphere. The highest pneumonia rates are those for porters (16·0), miscellaneous railway workers (16·3), dock labourers (16·6), woollen scourers, calenderers and finishers (17·2), marine firemen (17·2), textile breakers, hecklers, &c. (18·4), and costermongers (19·5). In this case, the association with smoke seems less obvious, all but the two textile occupations being widely represented in all parts of the country. Two of the six are associated with seaports, and the worst of all probably involves in many cases a special degree of exposure for the infant.

It might perhaps be expected that mortality ascribed to premature birth would show more evidence of association with work during pregnancy than that from malformations, but this does not prove to be the case. The highest rates are those for spinners and piecers (25·7), miscellaneous railway workers (26·1), carpet beaters, window cleaners, &c. (26·2), unskilled brick tile and pottery workers (27·6), dentists (27·6), and shipyard labourers (29·4). Compared with the general average of 18·8, these excesses are remarkably small, and only two out of the five suggest special likelihood of employment for the wife.

The small amount of mortality now ascribed to suffocation in bed varies much with social class, from 0·2 (3 deaths) in Class I to 0·9 (106 deaths) in Class V. The highest rates recorded are 2·8 for shipyard labourers, 2·3 for textile finishers, and 2·2 for costermongers.

Mortality of the Illegitimate.

The mortality of illegitimate infants was in 1921 just double that of the legitimate. The excess was, as usual, greatest for syphilis (9·0 as against 1·1), the highest rates from this cause being those for rag, bone, &c., sorters (27·4, 2 deaths) and for two textile occupations (19·4 and 18·5), but the data are too scanty to furnish reliable rates. Deaths ascribed to congenital debility are also in special excess for the illegitimate, but this does not apply to premature birth. The smallest excess is that for congenital malformations (4·0 legitimate, 4·4 illegitimate). Reference has already been made to the fact that these conditions appear to have a relation to the occupation of the mother, mortality from them tending to be high in textile and other occupations involving manual labour. It is higher for the occupied (4·7) than for the unoccupied (3·5). It is much higher (8·3) for textile workers than for domestic servants (3·7), to make a comparison where the deaths (25 and 50 respectively) provide an adequate basis of fact. But for charwomen (6 deaths) whose work is probably harder than that of indoor domestic servants, the rate is 6·8. Of occupational death-rates from this cause, based on more than two deaths, the highest are those of miscellaneous unskilled workers (14·9), spinners and piecers (14·0), sick nurses, etc. (12·8), winders, warpers, etc. (8·6), warehouse women and packers (7·8), and textile hecklers, etc. (7·4). This list displays the special incidence on the textile worker already noted for married women, but it is unfortunate that information as to the occupation of the mother is available only for the unmarried, whose children are too few to provide satisfactory basis of facts for examining the occupational incidence of so rare a cause of infantile death. But the data, such as they are, for illegitimate and legitimate infants alike (and for 1911, as well as for 1921) indicate special frequency of fatal malformations in the infants of textile workers, and probably of others doing similar manual work.

TABLE A.—OCCUPATIONAL MORTALITY, LEGITIMATE FERTILITY AND INFANT MORTALITY.

MORTALITY (1921-1923) OF MALES, AGED 20-65, IN EACH OCCUPATION DISTINGUISHED IN THE CENSUS REPORT.

ALSO THEIR

LEGITIMATE FERTILITY AND THE MORTALITY OF THEIR INFANTS DURING 1921.

MORTALITY OF MALES, AGED 20-65 YEARS, IN EACH OCCUPATION (1921-1923).					LEGITIMATE FERTILITY, 1921.					INFANT MORTALITY (1921).						
Number of Males aged 20-65 Years. (Census, 1921).	Registered Deaths of Males aged 20-65 Years.	Calculated* Deaths of Males aged 20-65 Years.	Ratio of Deaths Registered to 100 Calculated.	For further information, see page 1.	Occupation Code Number.	Social Class.	OCCUPATION.					Ratio of Deaths Registered to 100 Calculated Births.	Crude Birth-rate per 1,000 Males under 55 Years of Age.	Crude Birth-rate compared with that of all Males taken as 100.	Deaths of Legitimate Infants under 1 Year of Age.	Infant Mortality per 1,000 Births.
							(1)	(2)	(3)	(4)	(5)					
10,082,062	278,911	275,207	101	2	—	—	All Males	5,802,922	810,196	810,196	100	140	100	64,135	79	
9,704,860	266,384	266,384	100	2	—	—	All Occupied and Retired Males†	5,710,219‡	805,345	799,676	101	141	101	63,636	79	
1,225,618	5,813	7,048	82	3	—	1	Social Class I (Upper and Middle)§	127,157	12,404	14,606	85	98	70	476	38	
1,974,884	54,913	58,205	94	3	—	2	Social Class II (Intermediate)§	1,155,491	120,306	141,806	85	104	74	6,665	55	
4,218,715	103,990	109,528	95	4	—	3	Social Class III (Skilled Workers)§	2,597,138	365,337	378,042	97	141	101	28,077	77	
1,984,906	53,839	53,839	101	4	—	4	Social Class IV (Intermediate)§	1,139,655	184,358	168,902	109	162	116	16,483	89	
1,300,737	47,829	38,128	125	5	—	5	Social Class V (Unskilled Workers)§	690,778	122,940	96,320	128	178	127	11,935	97	
24,485	630	690	91	—	000	4	I. Fishermen	14,487	2,793	2,145	130	193	138	276	99	
876,400	18,544	27,416	68	—	—	—	II. Agricultural Occupations	429,577	57,230	53,699	107	133	95	3,438	60	
1,644	20	63	32	—	010	2	Land and Estate Agents and Managers (not Auctioneers and Estate Agents)	886	77	82	94	87	62	6	78	
218,494	5,605	7,871	71	—	011	2	Farmers	125,215	16,878	13,696	123	135	96	40	50	
48,254	156	156	22	—	012	2	Farmers' Sons or other Relatives assisting in the Work of the Farm	6,903	389	1,471	26	56	32	82	53	
147,537	3,667	5,186	71	—	013	3	Gardeners, Nurserymen, Seedsmen, Florists	78,130	7,811	8,751	89	100	71	417	53	
3,476	27	50	54	—	014	2	Agricultural and Forestry Pupils (not at Colleges)	1,003	93	175	53	93	66	3	32	
21,020	374	691	54	—	015	3	Farm Bailiffs and Foremen	13,800	1,377	1,502	92	100	71	67	49	
8,630	204	292	70	—	016	3	Foresters and Woodmen	4,560	582	518	112	128	91	42	72	
1,418	22	44	33	—	017	2	Agricultural Machine, Tractor—Proprietors, Managers, Foremen	876	78	108	72	89	64	8	103	
97	1	3	30	—	018	3	Drainage Superintendents, Foremen, etc.	55	6	5	120	109	78	—	—	
9,384	195	327	60	—	020	4	Shepherds	5,253	608	571	106	116	83	28	46	
8,338	96	189	51	—	021	4	Agricultural Machine, Tractor—Drivers, Attendants	4,764	737	749	98	155	111	51	69	
383,165	7,748	11,209	69	7	022-4	4	Agricultural Labourers, Farm Servants	176,572	27,315	24,565	111	155	111	1,858	68	
15,536	238	474	50	6	025	5	Gardeners' Labourers	6,929	724	937	77	104	74	40	55	
685	12	26	46	—	026	4	Land Drainers, Drainage Labourers	333	25	35	71	75	54	2	80	
668	10	22	45	7	027	4	Labourers in Woods and Forests	273	33	29	114	121	86	3	91	
2,687	94	108	87	—	028	5	Estate Labourers	1,286	170	139	122	132	94	7	41	
784	2	23	9	—	038	5	Pea and Fruit Pickers	352	1	56	2	3	2	—	—	
4,585	73	134	54	—	039	4	Other Agricultural Occupations	2,387	326	310	105	137	98	23	71	
847,797	21,171	20,822	102	—	—	—	III. Mining and Quarrying Occupations	528,596	104,740	84,244	124	198	141	10,743	103	
786,242	19,322	19,950	101	—	—	—	1. In Coal and SHALE MINES	493,550	99,196	79,488	125	201	144	10,246	103	
5,712	963	1,183	73	—	040	2	Owners, Agents, Managers	3,669	283	395	72	117	55	12	42	
39,330	978	1,183	81	8	041	3	Subordinate Superintending Staff (including Inspectors, Contractors and Foremen)	29,957	3,577	3,564	100	119	85	260	73	
468,394	9,788	10,689	92	—	042	3	Hewers and Getters	314,784	63,007	52,168	121	200	143	6,489	103	
72,026	1,452	1,886	122	9	043	4	Persons Conveying Material to the Shaft	33,354	9,988	7,089	141	238	213	1,028	103	
50,354	1,826	1,546	118	10	044	4	Persons Making and Repairing Roads	29,267	6,198	4,190	148	212	151	671	108	
74,340	2,596	2,116	123	10	047	4	Other Workers Below Ground	43,083	6,366	4,136	144	212	151	1,073	117	
76,088	2,562	2,173	118	11	049	4	Other Workers Above Ground	39,466	7,057	5,746	123	179	128	713	101	
19,337	723	532	139	—	—	—	2. In METALLIFEROUS MINES AND WORKINGS	11,476	2,183	1,660	132	199	136	215	98	
337	9	12	75	—	050	2	Owners, Agents, Managers	708	23	23	70	77	55	—	—	
880	27	33	82	—	051	3	Subordinate Superintending Staff (including Inspectors, Contractors and Foremen)	579	36	56	70	67	48	4	103	
14,282	601	367	164	12, 13	054	3	Other Workers Below Ground	8,733	1,806	1,312	138	207	148	179	99	
3,788	86	110	78	12	056	4	Other Workers Above Ground and in Open Workings	1,956	324	269	120	166	119	32	99	
42,116	1,115	1,238	92	—	—	—	3. In OTHER MINES AND QUARRIES	23,482	3,340	3,083	109	143	102	282	84	
1,387	45	51	88	—	070	2	Owners, Agents, Managers	856	34	35	74	76	54	1	15	
1,224	36	46	78	—	071	3	Subordinate Superintending Staff (including Inspectors, Contractors and Foremen)	796	65	68	94	82	54	3	46	
22,871	628	665	94	13	072	4	Stone Miners, Quarriers	12,456	1,860	1,680	112	149	106	160	86	
5,491	167	174	96	14	073	4	Slate Miners, Quarriers	2,830	299	314	110	106	76	34	114	
8,740	168	235	71	—	074	5	Clay, Sand, Gravel—Pit Workers	5,235	766	766	110	161	115	75	89	
2,403	71	67	106	—	076	3	Other Workers	1,309	215	186	116	164	117	9	42	

* The calculated deaths are those which would have occurred if the mortality rate at each age group in the several occupations had been the same as that for all occupied and retired civilian males.

† The calculated births are those which would have occurred if the fertility rates at the various age groups in the several occupations had borne the same relations to each other as those stated for all married males in Table 12 of the Dependency, Orphanhood, and Fertility volume of the 1921 census.

‡ The figures used for calculation are based on those returned in that table, but are so increased as to yield the number of births registered in 1921.

§ The figures showing the Mortality of all Occupied and Retired Males and of the five Social Classes, refer to Civilians only.

TABLE A.—MORTALITY OF MALES, AGED 20-65 (1921-1923); FERTILITY AND INFANT MORTALITY (1921), IN EACH OCCUPATION—continued.

MORTALITY OF MALES, AGED 20-65 YEARS, IN EACH OCCUPATION (1921-1923).					LEGITIMATE FERTILITY, 1921.					INFANT MORTALITY (1921).									
Number of Males aged 20-65 Years. (Census 1921).	Registered Deaths of Males aged 20-65 Years.	Calculated* Deaths of Males aged 20-65 Years.	Ratio of Regs. to 100 Calculated.	For further information, see page.	Occupation Code Number.	Social Class.	OCCUPATION.					Number of Married Males under 55 Years of Age. (Census 1921).	Registered Legitimate Births.	Calculated Legitimate Births.†	Ratio of Regs. to 100 Calculated.	Crude Birth-rate per 1,000 Males under 55 Years of Age.	Crude Birth-rate compared with that of all Males taken as 100.	Deaths of Legitimate Infants under 1 Year of Age.	Infant Mortality per 1,000 Births.
(1)	(2)	(3)	(4)	(5)	(6)	(7)						(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
III. Mining and Quarrying Occupations—continued.																			
							4. AT OIL WELLS AND BRINE WELLS												
152	11	216	367	—	—	—	Managers	..	..	..	..	88	10	13	77	114	81	—	—
28	4	6	400	—	077	2	Foremen	..	..	..	..	15	3	2	150	200	143	—	—
24	1	0	—	—	078	3	Pumpers and Labourers	..	..	..	..	55	6	9	67	109	78	—	—
100	6	2	300	—	079	5													
22,422	450	593	76	—	—	—	IV. Workers in the treatment of Non-Metalliferous Mine and Quarry Products (excluding Workers in Gas Works)					14,453	2,583	2,061	101	144	103	191	92
8,294	155	216	72	—	—	—	1. MAKERS OF COKE AND BY-PRODUCTS (EXCLUDING TAR DISTILLING)					5,695	766	789	97	135	96	95	124
189	3	6	50	—	080	2	Employers and Managers	..	..	..	..	144	16	14	114	111	79	1	63
454	8	13	62	—	081	3	Foremen and Overlookers	..	..	..	..	367	43	41	105	117	84	4	93
1,494	37	37	100	—	088	4	Other Skilled Workers	..	..	..	..	1,164	134	159	84	115	82	21	157
6,157	107	160	67	—	089	5	Other Workers	..	..	..	..	4,020	573	575	100	143	102	69	120
14,128	295	377	78	—	—	—	2. MAKERS OF OTHER PRODUCTS					8,758	1,317	1,272	104	150	107	96	73
831	30	27	111	—	090	2	Employers and Managers	..	..	..	..	536	41	61	67	76	54	5	122
616	18	19	95	—	091	3	Foremen and Overlookers	..	..	..	..	458	46	46	100	100	71	2	43
1,046	13	31	42	—	092	4	Kiln Men and Lime Burners	..	..	..	..	703	75	92	82	107	76	3	40
2,324	44	64	69	14	098	4	Other Skilled Workers	..	..	..	..	1,463	164	208	79	112	80	11	67
9,311	190	236	81	—	099	5	Other Workers	..	..	..	..	5,598	891	865	115	177	126	75	76
69,423	2,337	1,844	127	—	—	—	V. Makers of Bricks, Pottery and Glass					42,092	6,947	5,998	116	165	118	657	95
49,018	1,342	1,342	126	—	—	—	1. MAKERS OF BRICKS, POTTERY AND EARTHENWARE					29,870	4,737	4,167	114	159	114	467	99
2,918	93	99	94	—	100	2	Employers and Managers	..	..	..	..	1,865	84	186	88	66	66	7	43
1,375	48	47	102	—	101	3	Foremen and Overlookers	..	..	..	..	64	64	97	66	68	47	4	63
7,169	166	185	90	15	102	4	Brick and Unglazed Tile—Makers, Moulders, Pressers and Cutters	..	..	..	..	4,251	673	641	105	158	113	37	55
361	10	9	111	—	103	3	Furnace and Crucible Pot Makers	..	..	..	..	246	24	33	73	98	70	—	—
1,187	52	32	163	15	104	4	Potters' Mill Workers; Slip Makers and Arkmen	..	..	..	..	760	108	103	105	142	101	14	130
7,007	329	198	166	16	105	3	Potters; Ware—Makers, Casters and Finishers	..	..	..	..	4,479	604	587	103	135	96	63	104
621	27	14	193	16	107	3	Dippers and Glazers	..	..	..	..	441	75	67	112	170	121	11	147
1,496	71	52	137	16	108	3	Painters, Printers, Decorators	..	..	..	..	837	65	89	73	78	56	9	138
9,571	350	255	137	16	109	3	Kiln and Oven Men; Kiln Setters and Placers	..	..	..	..	6,461	983	894	110	152	109	108	110
280	1	8	13	17	110	3	Kiln and Oven Oddmen	..	..	..	..	161	6	25	24	37	26	—	—
2,878	98	73	134	17	111	3	Other Skilled Workers	..	..	..	..	1,776	233	255	91	131	94	26	112
14,327	451	370	122	17	118	5	Other Workers	..	..	..	..	7,623	1,738	1,738	147	228	163	188	108
20,233	641	502	128	—	—	—	2. MAKERS OF GLASS AND GLASS WARE					12,222	2,210	1,831	121	181	129	190	86
947	26	29	90	—	120	2	Employers and Managers	..	..	..	..	661	41	73	56	62	44	2	49
482	20	14	143	—	121	3	Foremen and Overlookers	..	..	..	..	358	29	41	71	81	58	2	69
1,026	27	29	93	—	122	3	Teazers and Founders	..	..	..	..	702	146	94	155	208	149	10	68
976	27	17	159	18	123	3	Gatherers	..	..	..	..	686	168	130	129	245	175	18	107
5,060	161	123	131	124	124	3	Blowers and Finishers (not Machine Hands)	..	..	..	..	3,142	649	506	128	207	148	72	111
2,316	70	59	119	125	125	3	Moulders and Pressers	..	..	..	..	1,445	417	213	196	289	206	16	38
610	29	15	193	126	126	3	Engravers and Cut Glass Workers	..	..	..	..	339	51	51	65	97	69	1	30
626	40	17	235	19	127	3	Glass Bevelers	..	..	..	..	442	74	52	142	167	119	9	122
6,225	187	150	125	138	138	3	Other Skilled Workers	..	..	..	..	3,507	533	526	101	152	109	44	83
1,965	54	49	110	—	139	5	Other Workers	..	..	..	..	940	120	120	83	128	91	16	95
52,150	1,281	1,431	90	—	—	—	VI. Workers in Chemical Processes; Makers of Paints, Oils, etc.					33,689	4,589	4,666	98	136	97	421	92
31,512	784	881	89	—	—	—	1. WORKERS IN CHEMICAL PROCESSES					20,700	2,591	2,784	93	125	97	240	93
2,782	91	90	101	—	140	2	Employers and Managers	..	..	..	..	1,899	174	211	82	72	66	11	63
2,302	59	71	83	—	141	3	Foremen and Overlookers	..	..	..	..	1,732	124	188	86	121	86	14	73
1,099	26	29	90	142	142	3	Distillers and Stillmen	..	..	..	..	96	718	718	85	121	46	100	100
6,715	81	168	48	143	143	3	Process Men and Furnacemen	..	..	..	..	5,010	460	715	72	92	66	100	95
3,936	83	106	78	148	148	3	Other Skilled Workers	..	..	..	..	2,527	248	346	72	98	70	81	95
14,678	444	417	106	—	149	5	Other Workers	..	..	..	..	8,746	1,489	1,211	123	170	121	142	95
20,638	497	550	90	—	—	—	2. MAKERS OF PAINTS, OILS (NOT MINERAL), ETC.					12,983	1,998	1,882	106	154	110	181	91
7,157	71	87	82	—	150	2	Employers and Managers	..	..	..	..	1,800	144	126	72	56	56	11	76
1,872	26	44	59	—	151	3	Foremen and Overlookers	..	..	..	..	1,068	124	126	59	68	49	16	81
3,976	83	50	84	20	152	3	Paint Grinders	..	..	..	..	1,116	164	131	91	137	98	12	73
10,869	270	267	101	—	159	5	Other Skilled Workers	..	..	..	..	2,885	331	331	88	124	89	16	55
							Other Workers	..	..	..	..	6,507	1,325	1,044	127	204	146	136	103

VII. Metal Workers (not Electro Plate or Precious Metals)											
1. EMPLOYERS, MANAGERS, FOREMEN											
Foreign and Overseas:											
Foundry											
Machine Shop											
Fitting and Erecting Shop											
Other and Undefined											
2. FURNACEMEN (NOT FOUNDRY) AND PUDDLERS											
Converters											
Skilled Furnacemen (including Keepers and Melters)											
Puddlers											
Pulpmen											
Shinglers											
3. ROLLERS											
4. FOUNDRY WORKERS											
Moulders (not Blast Furnace)											
Iron or Steel Foundry Furnace and Cupola Men											
Iron or Steel Foundry Labourers											
Brass or Bronze Foundry Furnacemen and Casters (not Moulders)											
Brass or Bronze Foundry Labourers											
Other Foundry (not Type) Furnacemen and Casters											
Other Foundry (not Type) Labourers											
5. SMITHS AND SKILLED FORCE WORKERS											
6. MACHINE TOOL WORKERS											
7. FITTERS AND MILLWRIGHTS											
Erectors, Fitters											
Tool Setters											
Millwrights											
Erectors, Fitters, Millwrights' Labourers											
8. OTHER WORKERS											
Annealers, Softeners, Hardeners and Temperers											
Art Metal Workers											
Boiler Makers; Platers, and Iron Shipwrights											
Boiler Makers' and Platers' Labourers											
Brass Finishers and Turners											
Card Clothing—Clothing, Setters, Nailers											
Constructional Engineers (not Professional), Steel Erectors, Structural Ironworkers											
Coppersmiths											
Cutlers (so returned)											
Cycle—Makers, Fitters and Mechanics											
Die Cutters and Sinkers											
Drillers (Hand, Pneumatic or Electric)											
File Cutters (Hand or Machine)											
Flers											
Galvanizers											
Gasfitters											
Gasfitters' Labourers											
Grinders											
Glazers, Polishers, Buffers and Moppers											
Gunsmiths and Gun Lock and Action Makers											
Heating and Ventilating Engineers (so returned)											
Japanners, Enamellers and Stovers											
Lead Burners and Chemical Plumbers											
Lock, Latch and Key Makers; Locksmiths											
Mechanical Engineers; Engineers (not Engine Drivers)											
Mechanics (so returned)											
Mechanical Engineers', Engineers' and Mechanics' Labourers											
Metal Spinners											
Motor Mechanics (so returned)											
Oxy-Acetylene or Electric—Welders and Cutters											
Pickers											
Pipe Fitters											
Plumbers (not Chemical Plumbers)											
Plumbers' Labourers											

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 † The calculated births are those which would have occurred if the fertility rates at the various age groups in the several occupations had borne the same relations to each other as those stated for all married males in Table 12 of the Dependency, Orphanhood, and Fertility volume of the 1921 census. The rates used for calculation are based on those returned in that table, but are so increased as to yield the number of births registered in 1921.

TABLE A.—MORTALITY OF MALES, AGED 20-65 (1921-1923); FERTILITY AND INFANT MORTALITY (1921), IN EACH OCCUPATION—continued.

MORTALITY OF MALES, AGED 20-65 YEARS, IN EACH OCCUPATION (1921-1923).					LEGITIMATE FERTILITY, 1921.		INFANT MORTALITY (1921).							
Number of Males aged 20-65 (Census 1921).	Registered Deaths of Males aged 20-65 Years.	Calculated* Deaths of Males aged 20-65 Years.	Ratio of Registered to 100 Calculated.	For further information, see page 1.	Occupation.	Number of Married Males under 55 Years of Age. (Census 1921).	Registered Legitimate Births.	Calculated Legitimate Births.†	Ratio of Registered to 100 Calculated Births.	Crude Birth-rate per 1,000 Males under 55 Years of Age.	Crude Birth-rate taken as 100, compared with that of all Males.	Deaths of Legitimate Infants under 1 Year of Age.	Infant Mortality per 1,000 Births.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VII.—Metal Workers (not Electro Plate or Precious Metals)—continued.														
8.—OTHER WORKERS—continued.														
3,721	99	86	115	—	254	4	2,236	452	365	124	202	144	42	93
21,549	544	509	107	29	255	3	13,946	3,119	2,312	135	224	160	301	97
1,294	29	22	132	—	256	4	486	133	96	139	274	196	18	135
1,195	37	38	97	—	257	3	675	60	77	78	89	64	3	50
541	12	17	71	—	258	3	314	44	42	105	140	100	3	68
521	16	14	114	—	259	4	377	45	55	82	119	85	4	89
2,218	36	51	71	—	260	3	1,330	152	203	75	114	81	14	92
972	23	28	82	—	261	3	679	48	80	60	71	51	9	188
1,073	24	27	89	—	262	4	659	87	98	89	132	94	5	57
2,105	54	54	100	—	263	4	1,284	180	192	94	140	100	17	94
26,820	710	704	101	30	264	3	15,999	2,300	2,412	95	144	103	165	72
14,658	256	299	86	24	265	3	8,808	1,297	1,500	86	147	105	84	65
2,327	79	50	158	—	266	3	1,581	412	271	152	261	186	35	92
812	16	13	123	—	267	3	423	96	81	119	227	162	4	42
5,300	103	119	87	—	268	3	3,182	518	544	116	165	116	41	79
1,513	54	36	150	—	269	3	961	170	184	180	177	126	13	76
66,563	1,522	1,699	90	20	270	3	41,365	5,422	6,200	87	131	94	459	68
91,911	1,950	2,394	81	20	271	5	52,263	7,718	8,009	96	148	106	791	102
23,482	624	633	99	—	280	—	14,595	1,866	2,046	91	128	91	135	72
3,073	58	99	59	—	281	2	2,093	153	234	65	73	52	9	59
429	12	12	100	—	282	3	327	20	37	54	61	44	—	—
2,155	53	52	102	—	283	3	1,319	185	198	93	140	100	9	49
1,035	41	283	124	—	284	3	572	72	74	97	126	90	7	97
5,752	144	151	95	30	285	3	3,250	361	486	74	111	79	25	69
2,229	57	53	108	—	286	3	1,571	269	234	115	171	122	23	86
843	25	22	114	—	287	3	341	97	78	124	179	128	30	103
5,037	131	135	97	30	288	3	3,112	430	453	95	138	99	30	70
978	22	26	85	—	289	3	624	80	83	96	128	91	8	100
1,599	76	82	181	—	290	3	983	167	141	118	168	120	14	84
352	5	8	63	—	299	4	193	32	28	114	166	119	—	—
112,758	1,878	2,207	85	—	—	—	67,770	9,902	11,137	89	146	104	654	66
IX. Electrical Apparatus Makers and Fitters (not elsewhere enumerated), and Electricians.														
4,485	48	111	43	—	300	—	3,386	290	444	65	86	61	17	59
4,152	65	103	63	—	301	3	3,396	210	444	47	82	44	7	33
416	5	9	56	—	302	3	297	25	25	51	84	60	3	120
2,712	29	46	63	—	303	3	1,470	258	274	94	176	126	16	77
343	1	8	13	—	304	3	245	13	41	32	53	38	1	—
18,401	420	342	123	31	305	3	10,143	1,492	1,658	90	147	105	87	58
8,432	120	151	79	—	306	3	5,062	857	871	98	169	121	53	62
27,478	335	499	67	—	307	3	15,488	1,594	2,671	60	103	74	102	64
2,742	33	55	60	—	308	3	212	212	267	79	122	87	2	94
3,386	46	62	74	31	309	3	1,808	228	326	70	126	90	17	75
3,659	34	65	52	—	310	3	2,065	291	358	81	141	101	12	41
19,609	509	403	126	31	311	3	12,933	3,183	2,089	152	152	176	235	74
4,903	56	97	58	—	318	3	2,974	415	498	83	140	100	28	67
12,040	177	256	69	—	319	4	6,759	834	1,147	73	123	88	74	89
19,261	488	537	91	—	—	—	10,409	1,078	1,450	74	104	74	69	64
2,182	103	74	139	—	320	—	1,446	200	157	127	138	99	8	40
305	7	7	29	—	321	3	218	9	28	32	41	29	—	—
4,087	84	87	97	—	322	3	2,298	268	376	71	117	84	19	71
11,852	273	345	79	31	323	3	6,036	545	829	66	90	64	39	72
226	9	9	129	—	324	3	113	9	15	60	80	57	64	111
187	5	5	180	30	325	3	189	8	12	67	90	64	1	125
257	5	5	180	—	326	3	123	17	21	81	138	99	—	—

[illegible]

* The calculated deaths are those which would have occurred if the mortality rate at each age group in the several occupations had been the same as that for all occupied and retired civilian males.
† The calculated births are those which would have occurred if the fertility rates at the various age groups in the several occupations had borne the same relations to each other as those stated for all married males in Table 12 of the Dependency, Orphanhood, and Fertility volume of the 1921 census. The rates used for calculation are based on those returned in that table, but are so increased as to yield the number of births registered in 1921.

TABLE A.—MORTALITY OF MALES, AGED 20-65 (1921-1923); FERTILITY AND INFANT MORTALITY (1921), IN EACH OCCUPATION—continued.

MORTALITY OF MALES, AGED 20-65 YEARS, IN EACH OCCUPATION (1921-1923).					Social Class.		OCCUPATION.		LEGITIMATE FERTILITY, 1921.						INFANT MORTALITY (1921).		
Number of Males aged 20-65 Years. (Census 1921).	Registered Deaths of Males aged 20-65 Years.	Calculated* Deaths of Males aged 20-65 Years.	Ratio of Registered to 100 Deaths.	For further information, see page 1.	Occupation Code Number.	(7)	(6)	(5)	(4)	(3)	(2)	(1)	Ratio of Registered to 100 Births.	Crude Birth-rate per 1,000 Males under 15 Years of Age.	Crude Birth-rate compared with that of all Males taken as 100.	Deaths of Legitimate Infants under 1 Year of Age.	Infant Mortality per 1,000 Births.
XIII.—Makers of Textile Goods and Articles of Dress—continued.																	
313	5	6	83	—	407	3	Embroiders and Embroidery Machinists	..	165	20	29	69	121	86	1	50	
339	10	8	125	—	408	3	Milliners	..	157	23	23	100	146	104	1	43	
3,932	172	125	138	42	409	3	Hat—Formers, Plankers, Stiffeners	..	2,339	326	288	113	139	99	24	74	
2,761	55	82	67	—	410	3	Hat—Sewers, Finishers, Trimmers	..	1,581	111	201	55	70	50	11	99	
1,155	32	29	110	—	411	3	Glove (not Knitted or Rubber)—Makers, Cutters, Sewers and Machinists	..	652	79	89	89	121	86	3	38	
50,395	1,529	1,550	99	42	412	3	Boot and Shoe Makers and Repairers (so returned)	..	26,609	2,756	3,474	79	104	74	216	78	
13,239	373	331	113	43	413	3	Boot, Shoe Slipper—Clickers and Cutters	..	7,749	963	1,130	85	124	89	67	70	
23,207	902	806	112	43	414	3	Other Defined—Skilled—Boot, etc., Factory Operatives	..	17,395	2,505	2,429	103	144	103	220	88	
2,416	74	78	95	—	415	3	Clog Makers	..	1,250	98	158	62	78	56	6	61	
692	31	24	129	—	416	3	Umbrella, Parasol—Makers, Coverers, Repairers	..	362	32	42	76	88	63	—	—	
422	17	14	77	—	417	4	Sack Makers	..	216	20	26	77	93	66	4	200	
2,850	69	90	110	—	418	4	Tarpaulin, Tent, Sail and other Canvas Goods—Makers, Dressers, Repairers	..	1,643	182	213	85	111	79	16	88	
1,182	34	31	110	—	419	4	Sewers, Stitchers, Sewing Machinists (not elsewhere enumerated)	..	577	64	85	75	111	79	—	—	
1,795	60	51	118	—	428	3	Other Skilled Workers	..	1,068	85	137	62	80	57	7	82	
7,706	208	202	103	—	429	4	Other Workers	..	4,318	377	608	62	87	62	22	58	
XIV. Makers of Foods, Drinks and Tobacco																	
161,908	4,473	4,569	98	—	—	—	1. MAKERS OF FOODS	..	99,497	12,477	13,396	93	125	89	907	73	
120,119	2,618	3,318	88	—	—	—	MAKERS OF FOODS	..	74,761	9,127	10,170	90	122	87	643	70	
20,526	659	689	98	—	430	2	Employers and Managers	..	14,874	1,534	1,607	95	103	74	95	62	
4,526	89	137	65	—	431	3	Foremen and Overlookers	..	3,495	264	389	68	76	54	19	72	
8,242	199	247	81	44	432	3	Grain Millers	..	4,673	606	648	94	130	93	34	56	
52,219	1,201	1,386	87	44	433	3	Bakers and Pastry Cooks (including Biscuit Makers)	..	30,810	3,841	4,380	88	125	89	284	74	
2,826	56	69	81	—	434	3	Sugar and Sweet Boilers	..	1,736	162	267	61	93	66	14	86	
3,506	58	74	78	—	435	3	Sugar Confectionery—Makers, Moulders and Coverers	..	2,028	335	343	98	165	118	18	54	
3,360	7	9	78	—	436	3	Jam Boilers	..	232	27	29	93	116	3	3	111	
1,977	83	53	157	—	437	3	Meat and Fish Curers and Smokers	..	1,307	257	193	133	197	141	21	82	
10,578	245	277	88	—	448	3	Other Skilled Workers	..	6,767	728	971	75	108	77	43	59	
15,357	321	392	82	—	449	4	Other Workers	..	8,839	1,373	1,343	102	155	111	112	82	
36,091	1,386	1,703	126	—	—	—	2. MAKERS OF DRINKS	..	21,459	2,921	2,740	107	136	97	236	81	
4,520	186	174	107	—	450	—	Employers and Managers	..	2,740	181	264	69	66	47	10	55	
2,865	103	98	105	—	451	3	Foremen and Overlookers	..	2,069	119	210	57	58	41	6	50	
2,813	112	89	126	—	452	4	Malsters	..	1,671	278	217	128	166	119	29	104	
2,118	96	68	141	45	453	4	Brewers of Ale, Stout or Porter	..	1,077	130	121	107	121	86	11	85	
367	4	8	50-	—	454	4	Distillers and Stillmen	..	273	14	40	35	51	36	2	143	
5,457	228	152	150	45	455	4	Cellar-men	..	3,173	443	426	104	140	100	33	74	
1,188	30	34	88	—	458	4	Other Skilled Workers	..	725	59	92	64	81	58	3	51	
16,763	627	480	131	—	459	4	Other Workers	..	9,731	1,697	1,370	124	174	124	142	84	
5,668	169.	148	114	—	—	—	3. MAKERS OF TOBACCO, CIGARS, CIGARETTES, SNUFF	..	3,277	429	486	88	131	94	28	65	
652	26	22	118	—	460	2	Employers and Managers	..	34	34	44	77	83	59	—	—	
437	10	14	71	46	461	3	Foremen and Overlookers	..	314	23	33	70	73	52	2	87	
3,960	120	97	124	—	468	3	Other Skilled Workers	..	2,227	315	354	89	141	101	24	76	
649	13	15	87	—	469	4	Other Workers	..	328	57	55	104	174	124	2	35	
XV. Workers in Wood and Furniture																	
395,598	10,091	11,441	88	—	—	—	1. WORKERS IN WOOD	..	236,236	28,973	31,774	91	123	88	2,014	70	
375,943	9,624	10,920	88	—	—	—	Employers and Managers	..	224,621	27,433	30,144	91	122	87	1,900	69	
18,383	747	619	121	—	470	2	Foremen and Overlookers	..	12,597	1,602	1,372	117	127	91	93	58	
8,859	181	296	61	—	471	3	Other Skilled Workers	..	6,577	288	699	41	44	31	22	76	
5,584	173	168	103	—	472	3	Basket Makers	..	2,798	349	352	99	125	89	30	86	
28,269	799	779	103	47	473	3	Cabinet Makers	..	16,282	2,301	2,284	101	141	101	169	73	
164,746	3,989	5,006	80	47	474	3	Carpenters	..	97,664	11,134	12,747	87	114	81	715	64	
14,692	425	460	92	47	475	3	Cartwrights, Wheelwrights, Wagonwrights	..	8,265	955	1,052	91	116	83	48	50	
17,793	368	437	84	47	476	3	Coach and Carriage Builders (including Trancars and Railway Carriages); Body Builders.	..	11,122	1,137	1,563	83	124	89	67	49	
8,313	369	274	135	47	477	3	Coopers, Hoop Makers and Benders	..	4,771	641	606	106	124	96	49	76	

TABLE A—MORTALITY OF MALES, AGED 20-65 (1921-1923); FERTILITY AND INFANT MORTALITY, (1921), IN EACH OCCUPATION—continued.

MORTALITY OF MALES, AGED 20-65 YEARS, IN EACH OCCUPATION (1921-1923).					LEGITIMATE FERTILITY, 1921.					INFANT MORTALITY (1921).				
Number of Males aged 20-65 (Census 1921).	Registered Deaths of Males aged 20-65 Years.	Calculated* Deaths of Males aged 20-65 Years.	Ratio of Regis-tered to 100 Deaths.	For further in-formation, see page 1.	Social Class.	OCCUPATION.	Number of Married Males under 55 Years of Age. (Census 1921).	Registered Legitimate Births.	Calculated Legitimate Births.†	Ratio of Regis-tered to 100 Births.	Crude Birth-rate per 1,000 Mar-ried Males under 55 Years of Age.	Crude Birth-rate compared with that of all Males taken as 100.	Deaths of Infants under 1 Year of Age.	Infant Mortal-ity per 1,000
XVII. Builders, Bricklayers, Stone and Slate Workers; Contractors— <i>continued.</i>														
4,573	159	150	106	54	3	Slaters and Tilers	2,854	405	342	118	142	101	32	79
1,166	26	30	87	55	3	Tile Layers; Mosaic Workers and Composition Floor Layers	763	114	102	112	149	106	9	79
26,805	1,360	924	147	55	3	Masons	15,302	1,697	1,643	103	70	111	119	70
9,605	281	271	104	57	5	Masons' Labourers	4,969	945	695	136	190	136	85	—
1,045	23	31	74	—	3	Architectural, Monumental Carvers	597	79	79	78	104	74	—	—
3,960	156	130	120	55	3	Stone Cutters and Dressers	2,272	245	260	94	108	77	29	118
2,140	105	66	159	55	3	Slate Workers and Slate Masons	1,079	180	129	140	133	129	24	74
45,040	1,212	1,318	92	56	4	Platelayers	28,442	4,778	3,829	125	168	120	355	74
1,627	47	167	89	—	4	Gas and Water Main Layers	1,060	107	118	91	101	72	8	75
5,463	189	167	113	—	4	Paviors and Street Masons; Concrete and Asphalters	3,477	478	433	110	137	98	38	79
1,867	83	51	163	—	4	Well, Mine—Sinkers, Borers	1,028	202	134	151	196	140	21	104
67,015	2,008	2,235	90	56	5	Contractors' Labourers; Navvies	35,286	5,422	4,614	118	154	110	494	91
1,405	75	35	214	—	5	Other Skilled Workers	864	121	130	93	140	100	66	8
4,262	73	104	70	57	4	Other Workers	2,562	282	410	69	110	79	44	156
XVIII. Painters and Decorators (not Pottery)														
177,842	5,864	5,290	111	—	—	Employers and Managers	111,116	14,314	14,339	100	129	92	1,079	75
10,044	527	341	155	52	2	Foremen and Overlookers	7,080	960	748	128	136	97	51	53
2,265	65	76	86	—	3	Painters and Decorators (House, Ship or General)	1,696	86	173	50	47	36	17	4
134,259	4,368	4,041	107	57	3	Painters (Vehicles)	83,151	10,707	10,866	100	129	92	80	80
13,547	388	363	108	—	3	Signwriters	8,719	1,201	1,148	96	132	94	92	80
3,441	107	93	115	—	3	Paperhangers	2,093	254	299	85	121	86	12	101
2,518	68	82	83	—	3	Other Skilled Workers	1,574	99	181	55	63	45	10	87
179	6	4	150	—	3	Other Workers	116	10	17	89	86	112	—	—
11,589	335	290	116	57	5	Other Workers	6,687	1,080	1,084	100	157	112	91	—
XIX. Workers in Other Materials														
26,838	704	703	100	—	—	1. WORKERS IN RUBBER, VULCANITE, EBONITE	16,161	2,223	2,406	92	138	99	140	63
15,054	321	354	91	—	—	Employers and Managers	9,416	1,422	1,475	96	131	98	91	14
1,050	32	30	107	—	2	Foremen and Overlookers	1,426	77	76	83	102	78	4	63
768	14	18	78	—	3	Mixers, Spreaders and Moulders	621	48	339	182	103	74	35	78
3,194	70	79	99	—	3	Vulcanizers	2,086	448	379	182	147	105	38	34
1,058	28	24	117	58	3	Other Skilled Workers	1,095	96	86	83	132	94	38	69
608	131	152	86	—	4	Other Workers	4,131	547	679	102	162	116	10	51
2,268	46	59	78	—	4	Other Workers	1,213	197	194	102	162	116	10	51
2. WORKERS IN BONE, HORN, IVORY, CELLULOID, ETC.														
2,420	82	73	112	—	2	Employers and Managers	1,404	156	193	81	111	79	11	71
223	6	3	86	—	3	Foremen and Overlookers	150	14	19	74	93	66	—	—
100	1	3	191	—	3	Turners	71	23	27	22	28	20	—	—
329	21	11	180	—	3	Scale Cutters and Pressers	167	23	27	85	138	99	4	174
282	8	10	105	—	3	Other Skilled Workers	146	11	19	58	75	54	—	—
1,201	36	35	103	—	3	Other Workers	710	74	97	76	104	74	5	68
285	10	7	143	—	4	Other Workers	160	32	22	145	200	143	2	63
3. WORKERS IN OTHER MATERIALS														
9,364	301	276	109	—	—	Employers and Managers	5,341	645	68	87	121	86	38	59
1,016	37	35	195	—	2	Foremen and Overlookers	673	56	69	83	59	32	2	32
400	11	13	184	—	3	Feather Dressers and Dyers	282	16	32	50	57	41	1	125
196	8	10	105	—	3	Feather Dressers and Dyers	113	27	15	180	239	171	1	37
3,378	132	105	126	58	3	Featherers and Brush Makers	1,765	232	231	100	131	94	16	69
2,842	83	76	105	—	3	Other Skilled Workers	1,603	207	253	82	129	92	16	77
1,358	30	40	73	—	4	Other Workers	905	107	138	78	118	84	1	9
XX. Workers in Mixed or Undefined Materials (not elsewhere enumerated)														
80,087	1,979	2,107	94	—	—	1. MAKERS OF MUSICAL INSTRUMENTS (NOT PIANO, ETC., CASE MAKERS)	47,267	7,073	6,814	104	150	107	629	89
10,924	229	278	104	—	—	Employers and Managers	5,756	622	749	83	108	77	38	61
192	29	28	104	—	2	Foremen and Overlookers	563	49	61	80	87	62	3	81
518	8	13	60	—	3	Action—Makers, Fitters and Assemblers	166	26	20	40	48	34	—	77
3,705	87	104	84	—	3	Piano Tuners	317	198	44	59	82	59	2	66
4,421	121	120	101	—	3	Other Skilled Workers	2,521	312	349	78	124	89	13	64

17,053	254	445	57	52	—	650	—	—	—	10,985	1,227	1,595	77	112	80	101	82
1,829	19	59	37	36	—	651	—	—	—	..	53	1,268	36	42	3	57	101
807	20	127	74	63	—	652	—	—	—	..	39	1,477	36	63	45	2	51
6,513	97	157	62	63	—	653	—	—	—	..	583	662	88	152	109	47	81
5,318	67	318	50	50	—	654	—	—	—	..	340	3,426	99	183	380	30	88
2,586	51	67	76	76	—	655	—	—	—	..	212	230	92	136	97	19	90
34,623	1,024	937	109	109	—	—	—	—	—	20,465	3,933	2,973	132	192	137	383	97
1,178	29	40	73	73	—	660	—	—	—	780	65	85	76	82	59	5	77
41	37	37	111	111	—	661	—	—	—	761	43	70	61	57	41	2	47
14,109	334	353	95	95	59	662	—	—	—	7,935	1,203	1,253	96	152	109	93	77
4,422	110	132	83	83	—	663	—	—	—	2,922	448	118	118	153	109	26	58
13,875	510	375	136	136	59	669	—	—	—	8,057	2,174	1,185	183	270	193	257	118
18,397	451	447	101	101	—	—	—	—	—	10,061	1,291	1,497	86	128	91	107	83
2,729	64	85	73	73	—	680	—	—	—	1,809	146	197	74	81	8	—	55
1,042	9	11	82	82	—	681	—	—	—	308	21	39	54	68	49	—	—
804	21	19	111	111	—	682	—	—	—	432	78	66	118	181	129	6	77
903	80	21	148	148	—	683	—	—	—	543	79	88	90	145	104	7	89
4,682	88	75	117	117	—	684	—	—	—	1,936	343	363	94	177	126	29	85
7,628	251	200	116	116	—	685	—	—	—	4,422	580	647	85	124	89	47	85
1,279	23	33	85	85	—	689	—	—	—	611	74	97	76	121	86	10	135
44,564	1,323	1,366	97	97	—	—	—	—	—	30,140	3,980	3,695	108	132	94	339	85
2,585	74	80	93	93	—	690	—	—	—	1,870	151	204	74	81	58	5	33
2,040	23	43	77	77	—	691	—	—	—	1,400	181	216	70	108	77	5	33
7,070	175	240	76	76	—	692	—	—	—	3,457	368	539	68	174	53	27	73
11,475	430	337	128	128	60	693	—	—	—	8,437	1,458	1,426	143	176	126	191	88
6,599	106	205	52	52	—	694	—	—	—	4,369	541	541	136	54	39	120	84
14,825	505	471	107	107	—	699	—	—	—	9,100	1,587	1,169	136	124	124	151	95
33,660	29,439	114	114	114	—	—	—	—	—	698,675	110,546	101,712	109	158	113	9,282	84
275,248	576	676	83	83	—	—	—	—	—	17,253	24,257	26,758	94	143	102	1,843	60
19,212	19,212	778	79	79	60	700	—	—	—	49,209	7,818	7,981	98	150	141	1,548	72
83,713	1,576	1,933	79	79	61	701	—	—	—	17,121	1,969	2,232	88	115	82	151	78
24,669	563	728	78	78	61	702	—	—	—	19,043	2,056	2,585	90	108	77	135	66
516	816	816	63	63	—	703	—	—	—	16,898	2,942	2,958	99	174	124	220	75
27,998	458	504	91	91	62	704	—	—	—	3,467	435	596	83	125	83	28	64
24,681	169	140	121	121	—	705	—	—	—	42,882	7,405	7,174	103	173	124	601	81
5,285	1,642	1,609	102	102	63	706	—	—	—	11,253	1,228	1,766	71	109	78	120	98
18,149	300	458	66	66	—	709	—	—	—	297,238	47,689	44,689	107	169	114	3,967	83
459,415	12,383	11,302	110	110	—	—	—	—	—	17,253	24,257	26,758	94	143	102	1,843	60
570	13	15	87	87	—	710	—	—	—	49,209	7,818	7,981	98	150	141	1,548	72
2,600	149	104	143	143	63	711	—	—	—	1,413	148	139	106	105	175	4	27
6,877	145	165	88	88	—	712	—	—	—	4,778	718	674	107	150	107	33	46
26,166	519	765	68	68	—	713	—	—	—	16,664	1,631	2,112	77	98	70	104	64
4,602	144	138	104	104	—	714	—	—	—	3,698	260	376	69	70	50	20	77
1,146	24	42	57	57	—	715	—	—	—	736	60	60	73	60	43	2	45
3,061	62	95	65	65	—	716	—	—	—	2,321	110	256	43	34	47	10	91
548	11	14	79	79	—	717	—	—	—	342	66	57	116	193	138	1	15
9,779	686	445	154	154	64	718	—	—	—	4,544	392	390	101	86	61	53	135
156,166	5,753	4,219	136	136	—	719	—	—	—	97,205	18,543	13,761	135	191	136	1,868	101
133,227	2,131	2,483	86	86	64	720	—	—	—	90,085	14,281	15,287	93	159	114	977	68
14,850	277	310	89	89	—	721	—	—	—	10,480	1,935	1,714	113	184	131	159	82
19,616	379	438	87	87	65	722	—	—	—	16,004	2,253	2,316	97	141	101	170	75
2,855	61	56	109	109	—	723	—	—	—	1,556	199	268	74	128	91	11	55
25,379	413	421	98	98	65	724	—	—	—	17,147	3,600	3,420	105	210	150	278	77
32,423	1,054	996	106	106	66	725	—	—	—	17,713	2,227	2,279	98	126	90	161	72
19,550	562	596	94	94	—	729	—	—	—	12,165	1,224	1,536	80	101	72	115	94
247,623	10,745	6,815	158	158	—	—	—	—	—	135,245	26,611	18,615	143	197	141	2,573	97
5,688	162	187	87	87	—	730	—	—	—	3,505	337	402	84	96	69	10	30
2,226	73	86	85	85	—	731	—	—	—	1,384	101	133	76	73	52	5	50
1,250	29	41	71	71	—	732	—	—	—	804	60	90	67	75	54	4	67
16,217	654	+	+	+	—	733	—	—	—	9,277	1,308	1,155	113	141	101	103	79
35,943	652	+	+	+	—	734	—	—	—	8,173	1,798	1,163	155	220	157	122	68
24,621	1,242	+	+	+	—	735	—	—	—	14,607	3,379	2,391	141	231	165	328	97
20,243	841	+	+	+	—	736	—	—	—	12,012	3,202	2,120	151	267	191	368	115
19,885	784	611	128	128	66	737	—	—	—	9,379	2,262	1,546	146	241	172	176	78
						738	—	—	—	12,484	2,153	1,663	129	172	123	206	96

* The calculated deaths are those which would have occurred if the mortality rate at each age group in the several occupations had been the same as that for all occupied and retired civilian males.
† The calculated births are those which would have occurred if the fertility rates at the various age groups in the several occupations had borne the same relations to each other as those stated for all married males in Table 12 of the Dependency, Orphanhood, and Fertility volume of the 1921 census. The rates used for calculation are based on those returned in that table, but are so increased as to yield the number of births registered in 1921.
‡ See Appendix B.

TABLE A.—MORTALITY OF MALES, AGED 20-65 (1921-1923); FERTILITY AND INFANT MORTALITY (1921), IN EACH OCCUPATION—continued.

MORTALITY OF MALES, AGED 20-65 YEARS, IN EACH OCCUPATION (1921-1923).						LEGITIMATE FERTILITY, 1921.					INFANT MORTALITY (1921).					
Number of Males aged 20-65 Years. (Census 1921).	Registered Deaths of Males aged 20-65 Years.	Calculated* Deaths of Males aged 20-65 Years.	Ratio of Registered to 100 Calculated Deaths.	For further information, see page 1.	Social Class.	Occupation.	Code Number.	(7)	OCCUPATION.					Deaths of Legitimate Infants under 1 Year of Age.	Infant Mortality per 1,000	
									(8)	(9)	(10)	(11)	(12)			(13)	(14)	(15)
XXII. Persons employed in Transport and Communication—continued.																
3. WATER TRANSPORT WORKERS—continued.																
988	23	36	64	—	1	Marine and Engineering Superintendents	739	1	594	71	57	125	120	86	3	42
3,757	103	128	80	—	3	Harbour, Dock and Stevedoring Foremen	740	3	2,622	186	271	69	71	186	10	54
2,218	60	75	80	—	4	Lock Keepers; Bridge, Stage and Pier Men	741	4	1,433	180	180	103	129	92	7	38
745	9	23	39	—	4	Lighthousemen and Crew of Lightships	742	4	447	28	58	48	63	45	—	—
4,743	231	140	165	67	4	Stewards	743	4	3,034	383	383	148	187	134	52	92
6,843	273	223	122	67	5	Coal Port Loaders and Dischargers	744	5	4,679	555	517	107	119	85	31	56
84,479	3,989	2,588	155	68	5	Other Dock Labourers	745	5	48,288	10,097	6,133	165	209	149	1,132	112
4,018	94	114	82	—	4	Other Workers (not elsewhere enumerated)	746	4	2,523	323	353	92	128	91	16	50
4. OTHER WORKERS IN TRANSPORT AND COMMUNICATION																
137,732	4,786	4,350	110	—	—	Employers and Managers	750	—	93,999	11,689	12,158	96	124	89	881	75
5,385	14	20	70	—	2	Foremen	751	2	3,474	41	44	93	121	86	2	49
5,336	149	118	66	—	3	Aviators	752	3	276	23	42	55	32	23	4	36
61,360	1,278	1,545	83	—	3	Postmen and Post Office Sorters	753	3	40,778	4,790	5,373	89	117	84	—	68
XXIII. Commercial, Finance and Insurance Occupations (excluding Clerks)																
1. COMMERCIAL OCCUPATIONS																
905,818	26,494	26,207	101	—	—	Proprietors, Managing Directors, Managers of Wholesale or Retail Businesses	770	—	550,300	57,938	69,384	84	105	75	3,642	63
813,898	23,736	23,132	103	—	2	Brokers, Agents, Factors (not elsewhere enumerated)	771	2	491,325	53,393	63,037	85	108	77	3,418	64
398,400	13,243	13,000	102	69-71	2	Buyers	772	2	265,315	27,279	30,257	90	103	74	1,721	63
27,975	827	943	88	—	2	Commercial Travellers	773	2	16,387	1,223	1,784	69	75	54	73	60
76,712	2,356	2,131	111	73	2	Cannvases (not Dock, Insurance or Railway)	774	2	8,185	1,017	1,017	64	80	57	27	41
3,830	94	118	80	74	3	Salesmen and Shop Assistants	775	3	47,988	5,056	6,075	83	105	75	274	54
215,173	4,306	4,450	97	71-73	3	Roundsmen and Van Salesmen	776	3	2,223	157	284	55	71	51	12	76
23,086	448	474	95	74	3	Costermongers and Hawkers	777	3	104,597	13,462	16,781	80	129	92	765	57
36,990	1,754	1,096	180	74	5	Newspaper Sellers	778	5	14,622	1,985	2,426	82	136	97	129	138
3,413	212	95	223	74	2	Advertising Agents	779	2	20,191	2,549	2,873	89	158	113	30	—
4,710	89	130	68	—	2	Other Commercial Occupations	789	2	1,364	216	220	98	158	113	30	—
12,341	185	373	50	—	2	PERSONS EMPLOYED IN FINANCE AND INSURANCE	790	—	3,176	258	408	63	81	58	6	23
91,920	2,758	3,975	90	—	—	Company Directors (so returned)	791	—	7,277	464	912	51	64	46	30	65
2,033	124	83	149	—	1	Bankers, Bank Officials (Heads of Departments, Managers, Inspectors)	792	1	58,975	4,635	6,347	73	79	56	224	48
9,587	237	359	96	75	1	Stock Brokers and Stock Jobbers	793	1	1,117	161	105	153	144	103	8	50
5,757	203	211	96	—	1	Insurance Officials (Heads of Departments, Managers, Inspectors)	794	1	5,778	359	518	65	59	42	10	29
18,008	327	542	60	75	1	Insurance Agents and Brokers	795	1	3,264	256	309	83	78	56	7	27
35,219	1,173	1,166	101	76	3	Insurance Cannvases	796	3	12,830	835	1,419	59	65	46	32	38
2,309	40	74	54	76	3	Auctioneers, Appraisers, Valuers	797	3	23,152	1,987	2,561	78	86	61	119	60
13,468	469	462	102	76	1	Money Lenders and Pawnbrokers	798	1	1,481	49	24	29	33	24	—	—
3,977	125	129	97	—	2	Other Finance and Insurance Occupations	799	2	7,838	686	865	79	88	63	37	54
1,562	60	49	122	—	2	XXIV. Persons Employed in Public Administration and Defence excluding Professional Men and Typists.	800	—	2,622	218	292	75	116	83	11	50
1. PUBLIC ADMINISTRATION																
236,801	4,650	5,830	80	—	—	Civil Service Officials and Clerks	801	—	205,114	33,296	34,377	97	162	116	2,067	62
236,801	4,550	5,830	80	—	2	Local Authority Officials and Clerks	805	2	136,026	16,423	20,243	81	121	86	910	55
11,969	2,066	2,813	73	77	2	Police	805	2	60,757	6,877	8,985	77	113	81	333	51
52,524	1,148	1,476	78	77	2				30,089	2,641	3,898	68	88	63	147	56

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
2.	DEFENCE													
	Naval and Marine—Commissioned Officers (Effective)	1	810	811	812	813	814	815	816	817	818	819	820	821
	Naval and Marine—Other Ratings	3	810	811	812	813	814	815	816	817	818	819	820	821
	Army—Commissioned Officers (Effective)	1	810	811	812	813	814	815	816	817	818	819	820	821
	Army—Other Ratings	4	810	811	812	813	814	815	816	817	818	819	820	821
	Royal Air Force—Commissioned Officers (Effective)	1	810	811	812	813	814	815	816	817	818	819	820	821
	Royal Air Force—Other Ratings	3	810	811	812	813	814	815	816	817	818	819	820	821
	XXV. Professional Occupations (excluding Clerical Staff)													
	Clergymen (Anglican Church)	1	820	821	822	823	824	825	826	827	828	829	830	831
	Roman Catholic Priests; Monks	1	820	821	822	823	824	825	826	827	828	829	830	831
	Ministers of Other Religious Bodies	1	820	821	822	823	824	825	826	827	828	829	830	831
	Itinerant Preachers, Scripture Readers, Mission Workers, Sisters of Charity	1	820	821	822	823	824	825	826	827	828	829	830	831
	Church, Chapel, Cemetery—Officials	2	820	821	822	823	824	825	826	827	828	829	830	831
	Officials of Religious Societies	1	820	821	822	823	824	825	826	827	828	829	830	831
	Barristers	1	820	821	822	823	824	825	826	827	828	829	830	831
	Solicitors	1	820	821	822	823	824	825	826	827	828	829	830	831
	Physicians, Surgeons, Registered Medical Practitioners	1	820	821	822	823	824	825	826	827	828	829	830	831
	Dentists	1	820	821	822	823	824	825	826	827	828	829	830	831
	Veterinary Surgeons, etc.	2	820	821	822	823	824	825	826	827	828	829	830	831
	Midwives	1	820	821	822	823	824	825	826	827	828	829	830	831
	Sick Nurses	3	820	821	822	823	824	825	826	827	828	829	830	831
	Mental Attendants	3	820	821	822	823	824	825	826	827	828	829	830	831
	Subordinate Medical Service (including Masseurs, Bone Setters and Herbalists)	3	820	821	822	823	824	825	826	827	828	829	830	831
	Teachers (not Music Teachers)	2	820	821	822	823	824	825	826	827	828	829	830	831
	Teachers of Music	2	820	821	822	823	824	825	826	827	828	829	830	831
	Consultant Engineers	1	820	821	822	823	824	825	826	827	828	829	830	831
	Civil Engineering and Surveying	1	820	821	822	823	824	825	826	827	828	829	830	831
	Mechanical and Electrical Engineering	1	820	821	822	823	824	825	826	827	828	829	830	831
	Mining Engineering	1	820	821	822	823	824	825	826	827	828	829	830	831
	Architects	1	820	821	822	823	824	825	826	827	828	829	830	831
	Ship Designers, Ship Surveyors, Naval Architects	1	820	821	822	823	824	825	826	827	828	829	830	831
	Chartered and Incorporated Accountants	1	820	821	822	823	824	825	826	827	828	829	830	831
	Analytical and Research Chemists; Assayers, Metallurgists	2	820	821	822	823	824	825	826	827	828	829	830	831
	Laboratory Attendants	3	820	821	822	823	824	825	826	827	828	829	830	831
	Articled Clerks and Pupils and Other Professional Students	1	820	821	822	823	824	825	826	827	828	829	830	831
	Other Persons Engaged in Scientific Pursuits	1	820	821	822	823	824	825	826	827	828	829	830	831
	Authors, Editors, Journalists, Publicists	1	820	821	822	823	824	825	826	827	828	829	830	831
	Librarians (not Booksellers)	2	820	821	822	823	824	825	826	827	828	829	830	831
	Political Association Officials	2	820	821	822	823	824	825	826	827	828	829	830	831
	Industrial and Trade Association Officials	2	820	821	822	823	824	825	826	827	828	829	830	831
	Social Welfare Workers	2	820	821	822	823	824	825	826	827	828	829	830	831
	Painters, Sculptors, Engravers (Artists)	2	820	821	822	823	824	825	826	827	828	829	830	831
	Other Professional Occupations	2	820	821	822	823	824	825	826	827	828	829	830	831
	XXVI. Persons Employed in Entertainments and Sport													
	Managers, Lessees of Theatres, Picture Theatres, Concert Halls, etc.	2	830	831	832	833	834	835	836	837	838	839	840	841
	Theatrical, Film Hiring and Variety Agents	2	830	831	832	833	834	835	836	837	838	839	840	841
	Film Producers, Film Studio Managers	3	830	831	832	833	834	835	836	837	838	839	840	841
	Showmen; Fair and Roundabout Proprietors and Managers	3	830	831	832	833	834	835	836	837	838	839	840	841
	Proprietors and Managers of Other Entertainments and Sports	2	830	831	832	833	834	835	836	837	838	839	840	841
	Actors	3	830	831	832	833	834	835	836	837	838	839	840	841
	Musicians	3	830	831	832	833	834	835	836	837	838	839	840	841
	Stage Hands, Cinema and Lighthouse Operators	3	830	831	832	833	834	835	836	837	838	839	840	841
	Race Horse Trainers; Jockeys and Training Stable Attendants	3	830	831	832	833	834	835	836	837	838	839	840	841
	Money Takers, Check Takers, Janitors, Programme Sellers, Attendants	4	830	831	832	833	834	835	836	837	838	839	840	841
	Bookmakers	3	830	831	832	833	834	835	836	837	838	839	840	841
	Other Occupations	3	830	831	832	833	834	835	836	837	838	839	840	841
	XXVII. Persons engaged in Personal Service (including Institutions, Clubs, Hotels, etc.)													
	Domestic Servants (Indoor)	3	840	841	842	843	844	845	846	847	848	849	850	851
	Gamekeepers and Game Watchers	2	840	841	842	843	844	845	846	847	848	849	850	851
	Restaurant Keepers	2	840	841	842	843	844	845	846	847	848	849	850	851
	Lodging and Boarding House Keepers	2	840	841	842	843	844	845	846	847	848	849	850	851
	Matrons and Stewards in Schools and Other Private Institutions	2	840	841	842	843	844	845	846	847	848	849	850	851
	Inn, Hotel—Keepers; Publicans; Beersellers	2	840	841	842	843	844	845	846	847	848	849	850	851
	Barnmen	3	840	841	842	843	844	845	846	847	848	849	850	851
	Waiters	3	840	841	842	843	844	845	846	847	848	849	850	851
	Hall and Hotel Porters; Doorkeepers and Carriage Attendants	4	840	841	842	843	844	845	846	847	848	849	850	851
	Laundry Workers; Washers, Ironers, Manglers	4	840	841	842	843	844	845	846	847	848	849	850	851

* The calculated deaths are those which would have occurred if the fertility rate at each age group in the several occupations had been the same as that for all occupied and retired civilian males.
† The calculated births are those which would have occurred if the fertility rate at the various age groups in the several occupations had borne the same relations to each other as those stated for all married males in Table 12 of the Dependency, Orphanhood, and Fertility volume of the 1921 census.
‡ See note § on page cxiii, and Appendix A, Table d.

TABLE A.—MORTALITY OF MALES, AGED 20-65 (1921-1923); FERTILITY AND INFANT MORTALITY (1921), IN EACH OCCUPATION—continued.

MORTALITY OF MALES, AGED 20-65 YEARS, IN EACH OCCUPATION (1921-1923).					LEGITIMATE FERTILITY, 1921.					INFANT MORTALITY (1921).					
Number of Males aged 20-65 Years. (Census 1921).	Registered Deaths of Males aged 20-65 Years.	Calculated* Deaths of Males aged 20-65 Years.	Ratio of Regis-tered to 100 Deaths.	For further in-formation, see page 1.	Occupation Code Number.	Social Class.	OCCUPATION.	(8) Number of Married Males under 55 Years of Age. (Census 1921).	(9) Registered Legitimate Births.	(10) Calculated Legitimate Births.†	(11) Ratio of Regis-tered to 100 Births.	Crude Birth-rate per 1,000 Mar-ried Males under 55 Years of Age.	Crude Birth-rate compared with that of all Males taken as 100.	(14) Deaths of Legitimate Infants under 1 Year of Age.	(15) Infant Mortal-ity per 1,000 Births.
XXVII.—Persons engaged in Personal Service (including Institutions, Clubs, Hotels, etc.)—continued.															
2,151	64	66	97	—	919	3	Managers, Attendants of Baths and Wash-houses	1,373	181	175	103	132	94	17	94
29,611	916	741	124	89	920	3	Hairdressers, Manicurists, Chiropodists	18,917	2,157	2,624	82	114	81	159	74
20,407	815	861	95	—	921	4	Caretakers and Office Keepers	12,605	691	1,088	64	55	39	59	85
2,500	49	56	—	—	922	4	Charwomen, Office Cleaners	1,332	92	156	59	69	109	10	109
12,247	434	307	141	—	923	4	Carpet Beaters, Vacuum Cleaners, Window Cleaners	1,108	7,841	1,118	112	111	101	118	106
1,414	186	168	111	89	924	3	Chimney Sweeps	2,586	295	264	112	114	81	27	92
2,192	105	75	140	—	925	3	Undertakers	1,393	101	145	70	73	52	69	69
23,075	789	678	116	—	929	4	Others in Personal Service	13,515	1,306	1,687	77	97	69	101	77
447,367	9,960	10,041	99	—	—	—	XXVIII. Clerks and Draughtsmen (not Civil Service or Local Authority); Typists.	223,686	24,971	33,362	75	112	80	1,262	51
12,700	161	394	41	—	930	1	Company Secretaries and Registrars	8,549	474	1,004	47	55	39	24	51
15,925	184	447	41	90, 91	931	2	Heads or Managers of Commercial Office Departments	11,774	313	1,459	21	27	19	14	45
21,929	343	388	88	91	932	2	Draughtsmen	9,847	1,285	1,734	74	130	93	50	39
14,061	66	267	25	90, 91	933	2	Costing and Estimating Clerks	7,931	367	1,330	28	46	33	25	68
382,752	9,206	8,545	108	91	939	2	Other Clerks	185,585	22,532	27,835	49	121	86	1,149	51
179,986	4,757	4,920	97	—	—	—	XXIX. Warehousemen, Storekeepers and Packers	106,762	12,772	14,507	88	120	86	942	74
33,181	2,306	2,283	101	92, 93	940	—	Warehousemen	48,893	5,828	6,495	90	119	85	437	75
33,500	908	857	95	93	941	3	Storekeepers	21,370	2,537	2,785	91	119	85	179	71
13,879	159	357	45	—	942	4	Warehouse and Storekeepers' Assistants (so returned—not Lace Warehouse Hands).	7,751	556	1,135	49	72	51	37	67
4,805	147	133	111	—	943	4	Packers:	2,687	263	372	71	98	70	17	65
1,815	43	52	83	—	944	4	Hookers, Lappers, Makers-up and Plaiters	1,054	154	147	105	146	104	9	58
3,614	88	117	75	—	945	4	China and Glass Packers	2,268	190	254	75	84	60	18	95
39,192	1,106	1,011	109	94	949	4	Furniture Packers	22,739	3,244	3,319	98	143	102	245	76
139,911	3,334	3,874	86	—	—	—	XXX. Stationary Engine Drivers, Dynamo and Motor Attendants	94,955	13,292	13,072	102	140	100	1,191	90
3,340	1,970	2,113	93	94	950	—	Stationary Engine and Crane Drivers	48,999	6,819	6,638	103	139	99	544	80
51,048	1,976	1,412	69	—	951	4	Boiler Firemen and Stokers	35,869	4,829	4,890	95	129	92	478	103
4,058	136	97	140	—	952	4	Boiler Stokers	2,797	416	416	142	217	155	63	107
3,873	119	106	112	—	953	4	Gas Producer Men	2,880	510	392	130	177	126	48	94
6,892	133	146	91	—	954	4	Dynamo, Motor and Switchboard Attendants	4,480	743	736	101	166	119	58	78
736,666	28,606	21,618	132	—	—	—	XXXI. Other and Undefined Workers	372,927	64,078	52,325	122	172	123	6,031	94
1,550	40	53	75	—	960	2	Employers and Managers (not elsewhere enumerated)	1,001	111	106	105	111	79	5	45
294	311	311	95	—	961	3	Foremen and Overlookers (not elsewhere enumerated)	6,472	496	658	75	77	55	25	50
14,031	483	468	103	—	962	4	Tunekeepers and Gatekeepers	8,526	953	1,026	83	100	71	68	80
17,905	1,001	809	124	—	963	5	Watchmen	8,528	754	880	86	88	63	73	97
1,337	38	38	100	—	964	5	Rag, Bone, Bottle, etc.—Sorters	655	82	90	91	125	89	8	98
755	75	27	278	—	965	5	Organ Grinders, Street Musicians, Street Artists	336	57	39	146	170	121	16	281
1,656	154	60	237	—	966	5	Drovers	627	60	62	97	96	69	6	100
6,110	233	133	121	—	967	3	Skilled Labourers (trade not determinable)	3,969	568	456	125	143	102	43	76
606,979	25,694	17,959	143	95	970-1	5	General and Undefined Labourers	309,540	59,630	43,455	137	193	138	5,673	95
30,259	—	696	—	—	979	5	Out of Work (not otherwise described)	91	81	1,571	1	2	1	—	—
26,576	8	374	83	—	987	4	Members of Defence Force (not otherwise described)	12,064	53	2,579	3	5	4	—	—
1,026	20	24	1,026	—	988	1	Officials (not Clerks) of Foreign Governments	491	53	72	74	108	77	1	19
19,340	566	606	93	—	989	4	All other Occupations	10,817	1,928	1,331	100	123	88	118	85

* The calculated deaths are those which would have occurred if the mortality rate at each age group in the several occupations had been the same as that for all occupied and retired civilian males.

† The calculated births are those which would have occurred if the fertility rates at the various age groups in the several occupations had borne the same relations to each other as those stated for all married males in Table 12 of the Dependency, Orphanhood, and Fertility volume of the 1921 census. The rates used for calculation are based on those returned in that table, but are so increased as to yield the number of births registered in 1921.

TABLE B.—MORTALITY at various Ages of Males in certain Occupations as compared with that of all Occupied and Retired Civilians of similar Age taken as 100 in each case.

Occupation Group No.	OCCUPATION.	Ages 20—65 (C.M.F. ratio).	16—	20—	25—	35—	45—	55—	65—	70 and upwards.
—	All Males	101·3	117	105	105	103	101	99	96	82
—	Social Class I (Upper and Middle)	81·2	57	67	65	76	85	87	94	82
—	II (Intermediate)	94·2	83	87	94	92	94	96	99	98
—	III (Skilled Workers)	95·1	98	99	95	92	93	98	100	97
—	IV (Intermediate)	100·7	100	104	105	105	101	97	94	102
—	V (Unskilled Workers)	125·8	121	116	125	138	130	119	110	115
1	Farmers and their Relatives	67·4	36	56	75	70	66	67	75	85
2	Gardeners and Labourers	70·7	60	100	91	68	61	69	68	79
3	Farm Bailiffs and Foremen	52·6	87	34	38	54	49	61	80	132
4	Woodmen and Labourers in Woods and Forests	71·4	77	127	80	74	75	58	66	95
5	Agricultural Labourers (including Shepherds)	68·8	69	87	85	65	63	67	73	100
6	Coal Mine—Subordinate superintending staff	82·3	120	68	87	60	79	95	118	164
7	Coal Mine—Hewers and getters	93·8	86	84	91	88	84	105	130	109
8	Coal Mine—Persons conveying material to shaft	120·4	128	119	133	128	115	117	105	119
9	Coal Mine—Persons making and repairing roads	119·1	119	155	132	117	115	114	104	140
10	Coal Mine—Other workers below ground	122·6	177	150	132	114	126	118	112	127
8—10	Coal Mine—Underground workers, not hewers or superintending staff	120·3	134	130	132	119	120	116	108	131
11	Coal Mine—Workers above ground, not superintending staff	118·3	156	149	133	125	112	112	102	113
7—11	Coal Miners, not superintending staff	103·4	122	107	104	98	97	110	116	114
12	Iron-ore Mine—Underground workers, not superintending staff	95·4	87	111	115	90	97	89	116	130
13	Tin and Copper Miners, not superintending staff	326·8	38	78	304	423	346	311	171	213
13a	Tin and Copper Mine—underground workers	433·5	66	35	359	550	482	423	281	249
14	Stone Miners and Quarriers	94·6	100	108	90	101	84	99	108	123
15	Slate Miners and Quarriers	94·4	58	45	102	69	96	109	158	125
16	Cement Workers, Lime Burners, etc.	71·7	66	57	75	84	83	59	84	98
17	Brick and Plain Tile Makers, Moulders, etc., Crucible Pot Makers	92·6	77	53	89	62	88	116	127	146
18	Potters' Mill Workers; Slip Makers; Potters	164·2	164	120	108	145	171	191	126	115
19	Pottery Dippers, Glazers, Painters, Decorators	141·3	68	118	54	123	179	152	142	138
20	Earthenware, China, etc., Kiln and Oven Men	183·0	29	98	80	199	212	197	188	101
21	Brick, Tile, etc., Kiln and Oven Men	87·8	132	65	43	97	76	108	146	170
22	Others making Bricks Tiles and Pottery	124·3	133	111	114	127	131	123	106	145
23	Skilled Glass House Workers	124·4	69	112	146	106	131	123	201	133
23a	Glass Blowers and Finishers (not machine hands)	131·4	69	103	130	136	138	129	223	114
24	Other Skilled Glass Workers	141·7	72	141	120	136	130	159	154	109
25	Chemical Workers	87·8	27	113	83	96	84	85	96	73
26	Makers of Paint, Oil, Soap, Grease, etc.	91·8	120	109	92	90	85	95	91	74
27	Workers in the Smelting, Rolling and Converting of Iron and Steel	102·5	90	68	106	105	100	107	99	115
27a	Puddlers	125·0	52	97	97	74	153	141	171	174
28	Metal Moulders	113·7	115	95	102	109	109	125	129	134
29	Iron Foundry Furnacemen and Labourers	111·6	141	117	106	122	117	104	97	106
30	Brass Foundry Furnacemen and Labourers	153·0	305	111	169	202	113	160	98	127
31	Smiths and Skilled Forge Workers	95·1	83	95	91	88	88	104	106	103
32	Machine Tool Workers and Metal Spinners	96·4	81	87	94	96	92	101	102	109
33	Fitters, Tool Setters, Millwrights, etc.	93·2	83	97	92	95	89	95	102	92
34	Boiler Makers and Platers, and their Labourers	96·8	88	97	95	87	97	102	105	100
35	Brass Finishers and Turners	129·3	89	136	107	167	142	109	113	137
36	Coppersmiths	108·7	51	153	139	103	102	101	118	112
37	Cutlery	128·4	63	106	101	169	139	114	127	100
38	File Cutters	185·1	—	103	187	241	190	168	204	132
39	Gas Fitters and Pipe Fitters	97·5	96	145	90	96	81	106	86	108
40	Metal Grinders	197·7	123	103	132	180	241	208	210	113
40a	Grinders in the cutlery trade	329·5	64	184	223	323	403	332	200	185
41	Metal Glazers, Polishers, Buffers, and Moppers	144·3	148	175	127	159	139	142	142	103
42	Plumbers	93·7	118	88	98	79	95	99	99	88
43	Riveters and their Labourers	106·2	147	118	112	121	102	99	127	203
44	Tinsmiths and Sheet Metal Workers	101·1	61	103	87	97	105	104	100	105
45	Gold, Silver, and White Metal Smiths	96·1	184	96	91	106	93	95	93	79
46	Electrical Engineers Fitters and Wiremen	104·2	95	94	88	101	100	115	115	81
47	Makers of Watches, Clocks, Scientific and Electrical Instruments	80·4	102	93	109	74	67	83	71	79
48	Skilled Lime and Tanyard Workers, Curriers, and Leather Dressers	111·1	123	122	134	126	100	104	103	123
49	Skilled Leather Goods Makers	88·7	121	150	103	81	90	78	96	76
50	Wool Sorters	122·5	188	161	163	124	99	121	100	86
51	Cotton Blow Room Operatives, Skilled	151·6	193	176	113	170	158	147	145	164
52	Rag Grinders, Wool Willowers, etc.	119·8	58	198	84	125	103	129	138	143
53	Cotton Card and Frame (not spinning frame) Tenters	160·1	40	71	154	152	144	190	141	192
54	Wool and Worsted Card Comb or Frame Tenters	137·3	111	107	139	148	140	135	119	119
55	Cotton Strippers and Grinders, Card Room Jobbers	139·6	161	63	69	90	149	186	245	223
56	Cotton Spinners and Piecers	124·8	114	122	98	103	116	150	168	161
57	Wool and Worsted Spinners and Piecers	110·3	136	155	88	86	115	119	123	113
58	Cotton Doublers, Winders, Warpers, Beamers, etc.	123·6	119	128	107	115	125	131	159	165
59	Wool and Worsted Doublers, Winders, Warpers, Beamers, etc.	97·0	69	131	127	70	86	103	80	106
60	Cotton Weavers	104·8	102	97	88	79	93	131	142	117
61	Woollen and Worsted Weavers	108·2	82	122	91	117	91	120	143	172
62	Weavers of other Textiles	88·8	157	67	82	83	92	94	97	185

TABLE B.—MORTALITY at various Ages of Males in certain Occupations as compared with that of all Occupied and Retired Civilians of similar Age taken as 100 in each case—*continued*.

Occupation Group No.	OCCUPATION.	Ages 20—65 (C.M.F. ratio).	16—	20—	25—	35—	45—	55—	65—	70 and up-wards.
63	Hosiery Frame Tenters and Machine Knitters ..	92.9	181	120	85	77	90	101	65	115
64	Dye Mixers and Dyers ..	130.4	146	113	147	124	119	139	134	128
65	Scourers (woollen, worsted, hosiery), Calenderers, Finishers ..	101.5	77	82	107	117	90	104	143	119
66	Cutters of Textile Goods and Clothing (not machine cutters) ..	116.8	143	162	134	95	121	113	93	125
67	Tailors; Tailors' Pressers and Machinists ..	101.5	90	94	114	112	101	95	91	71
68	Hat Formers, Plankers, Stiffeners ..	139.6	—	195	145	144	129	136	135	140
69	Boot and Shoe Makers and Repairers (not factory workers) ..	101.4	163	114	136	116	103	82	79	78
70	Boot and Shoe Clickers and Cutters ..	110.4	130	126	179	103	99	100	109	117
71	Other Skilled Boot and Shoe Operatives ..	112.0	141	146	132	110	102	109	133	119
72	Grain Millers ..	78.5	57	71	57	74	64	98	91	114
73	Bakers and Pastry Cooks ..	86.4	98	107	88	82	90	83	79	73
74	Brewers of Ale, Stout, and Porter ..	134.6	—	53	144	78	161	150	151	108
75	Cellarmen ..	151.0	149	145	144	185	135	150	108	109
76	Tobacco Factory Operatives ..	115.0	157	174	117	56	147	110	92	82
77	Foremen and Overlookers (Woodworking) ..	62.0	—	85	52	34	65	73	93	94
78	Cabinet Makers ..	102.6	100	107	89	95	107	106	99	92
79	Carpenters, Coachbuilders, Pattern Makers, etc. ..	84.3	99	95	83	77	84	86	86	89
80	French Polishers ..	123.0	198	89	116	141	123	122	106	101
81	Sawyers; Wood Turners and Machinists ..	86.8	115	88	78	91	94	82	103	120
82	Upholsterers, Coach Trimmers, and Bedding Makers ..	86.4	102	91	88	82	92	83	105	82
83	Paper Mill Workers ..	76.1	115	111	82	82	68	72	88	95
84	Hand Compositors ..	100.7	239	97	117	101	95	100	106	96
85	Machine Compositors ..	86.7	130	115	83	96	82	83	158	396
86	Photographers ..	88.2	114	81	103	116	83	76	102	91
87	Printing Machine Minders and Assistants; Machine Rulers ..	100.8	110	93	105	90	95	110	92	71
88	Bookbinders and Pattern Card Makers ..	109.8	170	178	112	90	112	107	93	87
89	Building and Contracting Employers and Managers ..	100.5	50	63	89	95	95	115	116	119
90	Foremen and Gangers (Building and Contracting) ..	73.2	—	51	65	61	81	79	88	108
91	Bricklayers ..	85.4	76	70	73	81	91	89	95	98
92	Plasterers ..	101.1	98	77	89	110	100	105	97	99
93	Slaters and Tilers ..	103.7	46	140	45	97	108	116	108	119
94	Masons, Stone Cutters and Dressers ..	139.0	100	94	93	140	161	143	127	114
95	Slate Masons and Slate Workers ..	159.6	226	71	173	141	172	167	182	209
96	Platelayers ..	92.0	107	93	91	84	92	96	109	130
97	Contractors' Labourers; Navvies ..	91.0	145	77	90	108	93	84	89	90
98	Painters and Decorators ..	107.4	99	98	93	108	113	109	109	102
99	Building Trades Labourers ..	106.0	89	89	86	109	113	108	109	130
100	Rubber Workers ..	89.2	103	98	95	76	90	91	54	71
101	Drafters and Brush Makers ..	132.0	146	256	134	134	168	88	119	98
102	Shipwrights ..	93.4	107	103	111	82	87	96	77	105
103	Shipyards Labourers, etc. ..	135.1	193	134	160	161	142	111	119	89
104	Gas Stokers ..	128.9	—	97	78	105	114	170	236	261
105	Railway Officials, Station Masters, etc. ..	67.9	113	—	67	61	68	81	97	87
106	Locomotive Engine Drivers, Firemen, Cleaners ..	79.2	74	82	78	72	75	85	98	98
107	Railway Guards ..	78.2	701	100	74	66	72	86	106	88
108	Railway Signalmen ..	62.2	245	39	51	54	56	77	92	99
109	Shunters, Pointsmen, and Level Crossing Men ..	91.4	98	98	81	99	88	92	72	104
110	Railway Porters and Lampmen ..	102.3	79	96	98	106	107	99	105	114
111	Livery Stable and Motor Garage Proprietors and Managers, etc. ..	79.1	43	91	74	80	74	82	79	101
112	Drivers of Horse-drawn Vehicles ..	137.8	101	128	131	143	141	137	140	142
113	Drivers of Motor Vehicles and Steam Wagons ..	86.2	103	97	89	84	79	90	96	127
114	Tram Drivers ..	87.5	214	146	97	83	82	83	79	159
115	Omnibus and Tram Conductors ..	99.0	168	76	101	99	116	89	105	159
116	Grooms and Horse Keepers ..	104.6	84	72	86	102	116	107	96	111
117	Bargemen and Boatmen ..	129.0	243	133	137	137	137	117	115	118
118	Stevedores ..	161.9	171	112	146	190	174	152	148	151
119	Coal Boat Loaders and Dischargers ..	123.1	270	127	123	141	116	119	143	124
120	Other Dock Labourers ..	153.2	135	128	135	178	162	145	124	137
121	Messengers, Hall Porters, Lift Attendants, etc. ..	120.0	110	253	151	113	112	101	103	72
122	Porters ..	149.7	176	161	160	172	152	134	120	106
123	Proprietors and Managers, Wholesale or Retail Dealing Businesses ..	102.9	198	123	104	99	101	103	103	96
123a	Proprietors and Managers, Fish, Meat, Green-grocery, Milk ..	117.5	197	131	122	114	112	120	107	102
123b	Proprietors and Managers, Grocery and Provisions ..	95.5	447	111	89	75	97	104	112	110
123c	Proprietors and Managers, Textiles and Clothing ..	94.1	225	91	88	92	89	101	101	105
124	Salesmen and Shop Assistants ..	97.3	101	93	92	103	100	95	81	86
124a	Salesmen and Shop Assistants, Fish, Meat, Green-grocery, Milk ..	128.0	115	108	111	127	128	136	114	129
124b	Salesmen and Shop Assistants, Grocery and Provisions ..	93.2	102	92	104	114	88	84	69	71
124c	Salesmen and Shop Assistants, Textiles and Clothing ..	106.9	117	106	100	114	113	101	73	106
125	Commercial Travellers ..	110.8	44	112	101	101	115	115	125	115
126	Canvassers, Roundsmen and Van Salesmen ..	87.7	108	109	110	96	84	77	75	79
127	Costermongers Hawkers and Street Sellers ..	166.0	181	139	172	202	180	142	120	104
128	Bank Officials ..	60.3	—	—	33	74	59	71	87	85

TABLE B.—MORTALITY at various Ages of Males in certain Occupations as compared with that of all Occupied and Retired Civilians of similar Age taken as 100 in each case—*continued*.

Occupation Group No.	OCCUPATION.	Ages 20—65 (C.M.F. ratio).	16—	20—	25—	35—	45—	55—	65—	70 and upwards.
129	Insurance Officials	58.5	—	14	52	50	64	66	73	77
130	Insurance Agents and Canvassers	103.9	175	170	149	112	98	82	89	91
131	Auctioneers, Appraisers, Valuers	103.1	75	159	93	88	110	100	108	91
132	Civil Service Officials and Clerks	73.9	94	61	76	64	76	78	76	78
133	Local Authority Officials and Clerks	77.6	79	69	78	66	80	83	85	76
134	Clergymen (Anglican Church)	56.1	—	—	50	62	56	63	83	74
135	Roman Catholic Priests, Monks	78.0	—	—	53	83	78	94	87	95
136	Ministers of other Religious Bodies	63.9	—	—	45	59	62	82	83	90
137	Barristers	117.1	—	278	116	120	107	101	86	86
138	Solicitors	89.9	—	69	49	89	102	96	92	71
139	Registered Medical Practitioners	102.1	—	141	89	90	106	103	90	81
140	Dentists	91.0	89	62	85	83	116	83	101	81
141	Teachers (not Music Teachers)	73.6	147	140	73	64	63	77	82	78
142	Music Teachers	109.6	—	249	144	117	91	90	87	89
143	Civil Engineers and Surveyors	75.2	58	92	55	79	82	73	99	77
144	Architects	92.9	104	132	56	84	83	110	120	97
145	Authors, Editors, Journalists	100.3	60	65	60	91	120	107	106	82
146	Artists	100.5	124	76	92	109	106	99	90	90
147	Proprietors and Managers of Theatres, Entertainments, Sports, &c... .. .	102.0	43	68	102	114	118	90	108	109
148	Actors	133.6	—	68	133	151	129	138	189	103
149	Musicians	122.0	42	137	115	139	118	117	126	106
150	Domestic Servants (indoor)	88.5	84	94	89	93	96	80	82	76
151	Gamekeepers	66.7	116	53	101	76	49	67	93	122
152	Inn, Hotel—Keepers, Publicans	158.5	19	66	145	197	181	142	132	115
153	Barmen	195.5	116	150	165	251	209	176	122	76
154	Waiters	132.3	151	136	91	131	154	129	109	140
155	Laundry Workers	89.3	64	86	126	78	88	85	77	77
156	Hairdressers &c.	123.4	128	130	133	110	130	121	113	96
157	Chimney Sweeps	112.3	—	206	84	107	104	116	102	92
158	Clerks (not civil service or local authority)	101.9	92	96	108	103	104	99	103	86
158a	Bank and Insurance Clerks	93.7	56	59	82	76	109	99	118	82
158b	Railway Clerks	92.0	75	88	92	86	87	98	186	128
159	Draughtsmen	89.4	57	75	93	93	94	85	135	69
160	Warehousemen	100.7	143	113	94	106	98	101	114	100
160a	Warehousemen; Textiles and Clothing	142.1	184	204	152	132	144	134	166	152
160b	Warehousemen; Cereals, Provisions and Dry Goods	103.9	99	117	93	107	100	107	108	87
161	Storekeepers	95.2	104	108	99	105	96	87	92	84
162	Packers	109.7	109	113	95	123	108	109	87	92
163	Stationary Engine and Crane Drivers	93.7	129	111	99	82	88	100	111	120
164	General and Undefined Labourers	143.8	170	139	150	155	148	135	128	138

TABLE C.—STANDARDIZED MORTALITY (COMPARATIVE MORTALITY FIGURES), FOR ALL CAUSES AND FOR CERTAIN SELECTED CAUSES, OF MALES AGED 20-65 YEARS
ENGAGED IN CERTAIN OCCUPATIONS, 1921-23.

NOTE.—The numbers of deaths upon which these comparative mortality figures are based are in some cases very small, and reference should be made to the Abstracts (pp. 1-116), which show for each occupation the numbers of deaths from the several causes and the years of life at risk.

Occupation Group Number.	Occupation.	All Causes.	Influenza.	Tuberculosis (all forms).	Respiratory tuberculosis.	Syphilis, &c. (38, 72, 76 and 91a).	Cancer (all sites).	Diabetes.	Cerebral hemorrhage, &c. (74 and 75a).	Diseases of the circulatory system.	Disease of the heart.	Valvular disease of heart.	Other heart disease.	Diseases of the respiratory system.	Bronchitis.	Pneumonia (100 and 101).	Diseases of the digestive system.	Peptic ulcer (111).	Appendicitis.	Cirrhosis of liver.	Chronic nephritis.	Suicide.	Accident.	Group Number.
1	All Males	1,013	36.5	182.7	168.4	28.9	127.8	12.1	45.4	152.4	128.8	63.9	64.9	151.3	49.0	85.2	61.4	16.5	8.9	9.8	35.1	24.8	50.3	—
2	Occupied and Retired Civilian Males	1,000	36.4	177.3	163.5	27.1	128.4	12.2	44.9	152.2	129.0	63.4	65.6	151.7	49.6	85.1	59.5	15.8	8.9	9.6	34.5	24.3	49.3	—
3	Social Class I (Upper and Middle)	812	30.4	90.1	80.0	19.7	102.5	15.2	39.7	96.2	105.8	36.1	69.7	96.2	12.7	70.5	75.8	14.3	15.1	15.6	34.3	28.1	39.9	—
4	Social Class II (Intermediate)	942	34.1	151.6	138.0	24.7	118.1	17.7	46.2	154.0	128.8	57.2	71.6	115.1	27.2	71.6	72.9	15.3	12.7	17.9	38.9	31.0	34.5	—
5	Social Class III (Skilled Workers)	951	34.0	173.4	159.8	26.1	123.8	11.2	44.7	141.5	120.1	61.1	59.0	139.2	46.5	76.2	52.6	15.3	7.9	6.3	33.4	22.0	46.8	—
6	Social Class IV (Intermediate)	1,007	40.0	177.7	164.2	26.0	127.1	9.2	42.3	147.7	127.7	67.3	60.4	168.2	59.4	91.1	55.7	16.6	7.5	7.1	31.4	21.6	63.8	—
7	Social Class V (Unskilled Workers)	1,258	43.0	243.8	229.0	37.9	157.8	8.1	48.5	182.5	156.5	80.9	75.6	236.5	87.4	127.8	63.5	19.8	6.2	8.3	36.7	23.7	59.2	—
8	Farmers and their relatives	674	26.7	81.9	67.7	7.1	93.0	16.0	32.2	101.3	88.2	44.7	43.5	73.7	11.4	50.4	58.6	13.9	14.5	7.5	24.9	30.0	37.0	1
9	Gardeners and their labourers	707	27.7	134.2	122.8	14.1	113.6	7.9	25.0	113.3	101.7	54.1	47.6	74.0	18.6	44.9	45.6	12.8	9.7	3.5	19.9	23.6	21.4	2
10	Farm bailiffs and foremen	526	23.9	43.0	40.4	10.4	89.7	3.5	20.6	78.1	71.7	36.4	35.3	42.3	11.6	47.8	33.6	11.3	4.2	2.5	16.7	29.1	37.1	3
11	Woodmen and labourers in woods and forests	714	22.0	134.9	120.8	17.7	95.7	12.0	21.1	101.9	93.6	36.8	56.8	48.3	9.8	27.2	46.7	18.1	9.8	3.3	9.3	24.0	78.6	4
12	Agricultural labourers (including shepherds)	688	31.7	111.4	96.1	10.5	89.7	7.3	26.2	101.9	91.6	46.8	44.8	89.9	24.3	54.0	39.8	10.4	5.9	2.8	20.7	24.3	45.4	5
13	Coal mine—subordinate superintending staff	823	33.9	77.6	70.5	13.4	103.1	6.8	44.9	116.0	96.2	44.8	51.4	107.1	33.0	50.7	53.1	11.7	12.7	8.2	24.8	16.0	131.2	6
14	Coal mine—hewers and getters	938	40.1	123.7	112.2	24.1	105.6	5.6	43.3	128.6	107.3	55.8	51.5	173.9	70.7	83.2	46.1	11.1	7.2	5.0	23.6	21.5	102.6	7
15	Coal mine—persons conveying material to the shaft	1,204	48.6	135.3	125.8	22.6	104.0	11.0	57.8	166.0	153.3	81.4	71.9	190.0	76.9	86.3	68.7	15.6	6.3	26.0	26.5	20.8	211.3	8
16	Coal mine—persons making and repairing roads	1,191	60.8	155.3	145.5	23.1	137.6	9.1	41.1	158.2	136.4	74.4	62.0	199.8	70.4	98.3	61.4	14.6	6.0	6.4	26.4	18.5	161.4	9
17	Coal mine—other workers below ground	1,226	64.1	166.1	151.0	23.8	125.2	10.5	49.7	172.5	145.3	78.4	66.9	220.7	82.6	114.4	63.3	14.0	7.7	7.7	30.5	20.6	152.7	10
18-10	Coal mine—underground workers, not hewers or superintg. staff	1,203	58.2	151.4	138.5	23.4	126.1	10.4	55.1	167.7	144.2	78.0	66.2	205.8	77.4	101.8	65.1	14.6	7.3	29.4	21.5	168.2	8-10	
19-11	Coal mine—workers above ground, not superintending staff	1,183	62.5	183.2	159.9	25.0	113.2	9.6	62.9	197.9	175.4	103.8	71.6	218.0	88.5	103.4	54.7	13.5	5.7	7.0	33.7	19.3	70.7	11
20-12	Coal miners, not superintending staff	1,034	47.5	136.4	123.4	23.6	111.9	7.8	49.1	146.6	126.1	67.9	58.2	186.8	73.8	90.8	51.1	12.6	6.8	5.6	26.2	20.8	116.6	12
21-13	Iron ore mine—underground workers, not superintending staff	954	75.9	158.2	133.2	3.8	108.9	8.7	43.7	110.6	75.9	49.2	26.7	141.6	33.8	61.8	51.6	9.8	11.9	3.0	15.0	21.2	98.2	13
22	Tin and copper miners—not superintending staff	3,268	43.2	148.2	146.5	—	179.4	43.2	134.0	236.2	206.4	59.3	147.1	659.6	192.8	45.6	60.5	15.3	15.3	—	75.5	74.9	83.0	13
13a	Tin and copper mine—underground workers, not superintg. staff	4,335	17.0	208.3	206.1	—	242.0	40.7	37.0	361.4	312.3	99.5	212.8	960.1	248.2	71.5	70.9	23.5	21.9	—	118.6	94.2	91.4	13a
14	Stone miners and quarriers	946	37.3	164.1	155.2	22.0	82.7	8.9	191.0	142.5	117.0	74.7	42.3	155.2	46.1	85.0	48.2	13.8	7.9	—	14.7	19.8	110.5	14
15	Slate miners and quarriers	844	44.0	279.2	260.6	10.6	91.8	24.7	61.8	197.9	187.0	104.4	39.5	106.6	25.8	38.4	26.6	14.4	—	5.4	9.8	5.6	96.7	15
16	Cement workers, lime burners, &c.	717	21.5	115.4	115.4	9.8	114.1	20.2	21.8	58.8	53.5	32.8	20.7	140.0	26.9	108.2	48.1	26.0	—	—	23.6	20.5	77.5	16
17	Brick and plain tile makers, &c.; furnace, &c., pot makers	926	45.2	181.6	167.2	42.4	111.4	4.5	27.7	147.5	130.1	70.2	59.9	180.4	98.9	64.9	40.7	20.6	—	—	21.5	21.9	20.8	17
18	Potters' mill workers; slip makers; potters	1,642	43.7	465.5	439.6	12.5	109.5	10.6	50.4	199.0	161.8	95.0	66.8	433.2	269.3	105.7	82.0	25.2	9.7	21.5	59.6	41.4	25.2	18
19	Pottery dippers, glazers, painters, decorators	1,413	32.1	283.2	249.1	19.5	195.1	12.7	104.1	249.7	204.5	66.2	138.3	166.3	94.2	72.1	72.1	20.1	—	26.4	79.5	12.7	—	19
20	Earthenware, china, &c., kiln and oven men	1,820	56.8	384.2	368.8	13.1	200.8	6.6	61.8	197.9	187.0	47.8	139.2	445.3	242.8	141.2	66.0	26.8	15.2	10.9	69.9	28.0	30.6	20
21	Brick, tile, &c., kiln and oven men	878	38.5	123.6	115.7	21.2	102.2	6.3	31.5	146.5	130.8	77.8	53.0	160.9	66.8	64.3	19.9	6.8	6.3	—	42.2	30.3	39.1	21
22	Other persons engaged in the manuf. of bricks, tiles, and pottery	1,243	49.3	196.5	175.7	25.1	139.7	16.1	54.2	193.5	159.2	79.0	80.2	253.8	131.1	97.4	75.3	33.1	13.0	4.8	37.8	27.8	67.5	22
23	Skilled glasshouse workers	1,244	42.6	239.7	235.3	19.3	167.5	43.8	59.6	174.4	137.9	79.2	58.7	241.8	131.5	84.3	42.1	13.8	7.8	8.5	35.9	41.7	20.7	23
23a	Glass blowers and finishers, not machine hands	1,314	24.1	248.3	248.2	27.5	193.9	46.3	43.4	167.8	125.9	69.1	56.8	278.5	159.6	80.5	58.2	17.6	7.9	16.2	48.4	37.5	16.2	23a
24	Other skilled glass workers	1,417	65.4	309.7	295.1	31.4	179.4	31.4	81.0	158.3	116.4	58.8	57.6	299.7	123.9	146.6	23.9	6.6	5.5	5.2	58.3	37.0	29.3	24
25	Chemical workers	878	41.9	153.8	123.7	19.5	159.8	8.7	25.8	144.9	104.9	50.7	54.2	154.2	65.3	81.8	53.1	10.6	13.4	7.6	17.4	10.6	62.2	25
26	Makers of paint, oil, soap, grease, &c.	918	42.4	156.3	140.4	16.6	128.4	6.7	52.4	144.9	129.0	82.8	66.2	148.2	57.9	63.9	46.5	8.1	10.3	2.4	26.6	11.0	48.1	26
27	Persons engaged in smelting, rolling, converting of iron and steel	1,025	49.0	156.3	145.5	17.5	148.4	8.2	41.1	129.0	102.9	52.0	50.9	219.1	133.2	128.7	53.3	14.2	6.7	7.8	23.9	23.4	61.1	27
27a	Puddlers	1,250	29.8	173.7	146.5	12.6	205.0	5.3	62.2	117.6	91.1	50.2	40.9	319.2	63.9	178.4	55.1	17.4	—	23.1	23.1	29.2	30.0	27a
28	Metal moulders	1,137	51.4	186.4	174.9	19.1	139.0	11.1	55.3	119.5	127.2	60.2	67.0	252.6	85.5	145.4	59.3	13.5	10.4	11.6	37.1	22.0	28.2	28
29	Iron foundry furnacemen and labourers	1,116	65.1	170.7	165.5	19.1	134.4	10.9	36.7	158.3	124.3	67.2	57.3	238.3	90.3	193.2	36.7	26.5	5.0	2.9	48.2	19.6	35.1	29
30	Brass foundry furnacemen and labourers	1,530	80.5	375.5	347.1	37.2	136.2	10.2	52.3	207.1	162.2	62.5	99.7	320.1	98.7	212.1	80.7	26.5	18.5	17.8	36.4	25.4	38.1	30
31	Smiths and skilled forge workers	951	36.2	155.0	141.7	28.1	143.4	14.8	40.5	139.2	113.3	82.6	50.7	159.8	57.4	89.1	51.3	15.0	6.0	7.1	31.4	21.4	32.1	31
32	Machine tool workers and metal spinners	964	32.7	191.5	180.8	24.0	136.3	9.3	34.5	144.5	121.6	63.9	57.7	147.7	50.7	79.0	50.3	14.1	9.3	3.8	32.8	21.0	20.9	32
33	Fitters, tool setters, millwrights, and similar occupations	932	29.8	167.8	155.9	33.2	122.1	10.8	32.4	146.1	118.7	62.7	56.0	118.8	33.7	69.4	58.8	10.6	8.1	3.9	32.2	21.4	47.6	33
34	Boiler makers and platers, and their labourers	968	32.1	165.7	156.0	30.8	121.4	7.8	50.2	148.6	123.6	68.5	58.1	154.8	48.5	89.6	66.6	19.3	10.0	6.0	31.6	25.4	45.1	34
35	Brass finishers and turners	1,293	57.8	354.4	336.9	41.5	186.8	11.6	49.9	129.1	105.8	60.1	45.7	238.0	87.8	131.3	67.2	26.4	10.1	15.2	37.9	11.7	23.1	35
36	Coppersmiths	1,037	58.0	296.9	290.8	19.9	109.0	—	118.7	90.6	79.4	60.9	18.5	121.9	11.2	81.1	69.6	16.8	11.2	11.2	94.2	—	28.3	36
37	Cutlery	1,284	24.4	367.9	369.3	18.2	145.0	8.6	44.3	220.6	165.8	94.0	71.8	223.2	44.3	132.5	9.6	19.1	—	27.9	27.9	27.9	27.9	37
38	File cutters	1,851	75.4	426.8	399.3	—	151.7	26.2	120.0	207.5	169.3	117.4	51.9	306.9	163.6	88.8	62.7	25.4	24.5	19.1	215.0	24.5	46.9	38
39	Gas fitters and pipe fitters	975	41.8	167.2	155.3	19.0	164.9	8.3	61.2	92.6	73.5	31.6	43.											

401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007
Grinders in the cutlery trade	Metal glazers, polishers, buffers, and moppers	Plumbers	Riveters and their labourers	Tinsmiths and sheet metal workers	Gold, silver, and white metal smiths	Electrical engineers fitters and wiremen	Makers of watches, clocks, scientific and electrical instruments	Skilled line and tanyard workers, curriers, and leather dressers	Skilled leather goods makers	Wool sorters	Cotton blow room operatives—skilled	Rag grinders; wool willowers, &c.	Cotton card and frame (not spinning frame) tenters	Wool, worsted card comb or frame (not spinning frame) tenters	Cotton strippers and grinders and card room jobbers	Cotton spinners and piecers	Wool and worsted spinners and piecers	Cotton—doubles, winders, warpers, beamers, &c.	Wool and worsted—doubblers, winders, warpers, beamers, &c.	Cotton weavers	Woollen and worsted weavers	Weavers of other textiles	Hosiery frame tenters and machine knitters	Dye mixers and dyes	Scourers (woollen, worsted, hosiery)	Cutters of textile goods and clothing (not machine cutters)	Tailors; tailors' pressers and machinists	Hat makers, plunkers, stiffeners	Boot and shoe makers and repairers (not factory workers)	Boot and shoe makers and cutters	Skilled boot and shoe operatives—not clickers or cutters	Grain millers	Bakers and pastry cooks	Brewers of ale, stout, and porter	Cellarmen	Tobacco factory operatives	Foemen and overlookers (wood working)	Cabinet makers	Carpenters, coachbuilders, pattern makers and similar occupations	French polishers	Sawyers, wood turners and machinists	Upholsters, coach trimmers, and bedding makers	Paper mill workers	Hand compositors	Machine compositors	Photographers	Printing machine minders and assistants, machine rulers	Bookbinders and pattern card makers	Employers, managers in building, &c., trades; clerks of works	Foremen and gangers (building and contracting)	Bricklayers	Plasterers	Slaters and tilers	Masons; stone cutters and dressers	Slate masons and slate workers	Contractors' labourers; navvies	Painters and decorators	Building trade labourers	Rubber workers	Draughts and brush makers	Shipwrights	Shipyard labourers, &c.	Gas stokers	Railway officials, station masters, &c.	Locomotive engine drivers, firemen, cleaners	Railway guards																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
3,295	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9	128.8	40	106.7	140.9																																																																																																																																																																																																																																												

TABLE C—STANDARDIZED MORTALITY (COMPARATIVE MORTALITY FIGURES), FOR ALL CAUSES AND FOR CERTAIN SELECTED CAUSES, OF MALES AGED 20-65 YEARS ENGAGED IN CERTAIN OCCUPATIONS, 1921-23—continued.

NOTE.—The numbers of deaths upon which these comparative mortality figures are based are in some cases very small, and reference should be made to the Abstracts (pp. 1-116), which show for each occupation the numbers of deaths from the several causes and the years of life at risk.

Occupation Group Number.	Occupation.	All Causes.	Influenza.	Tuberculosis (all forms).	Respiratory tuberculosis.	Syphilis, &c. (38, 72, 76 and 91a).	Cancer (all sites).	Diabetes.	Cerebral hemorrhage, &c. (74 and 75a).	Diseases of the circulatory system.	Disease of the heart.	Valvular disease of heart.	Other heart disease.	Diseases of the respiratory system.	Bronchitis.	Pneumonia (100 and 101).	Diseases of the digestive system.	Peptic ulcer (111).	Appendicitis.	Cirrhosis of liver.	Chronic nephritis.	Suicide.	Accident.	Group Number.
108	Railway signalmen	622	37-1	82-0	75-8	16-6	84-4	17-3	47-7	98-7	84-8	29-9	54-9	56-4	15-2	30-4	38-8	10-5	1-2	4-5	24-8	9-4	23-1	108
109	Shunters, pointsmen, and level crossing men	914	27-8	108-3	105-0	30-6	111-9	11-5	49-7	120-8	105-8	39-7	66-1	128-0	52-7	67-5	42-2	21-3	2-2	3-5	26-3	10-1	164-2	109
110	Railway porters and lampmen	1,023	45-8	197-6	188-1	34-0	138-8	14-8	45-5	129-8	112-6	52-5	60-1	157-6	66-5	71-9	51-9	24-0	6-0	4-7	36-8	14-7	52-5	110
111	Livery stable and motor garage proprietors; haulage contractors	791	25-5	102-4	98-5	20-1	99-7	8-7	29-6	131-7	108-1	46-9	61-2	118-0	45-2	59-8	64-4	17-1	14-5	13-2	29-5	34-7	52-0	111
112	Drivers of horse-drawn vehicles	1,378	46-3	232-1	215-3	41-8	183-9	12-3	59-1	202-1	172-6	85-9	86-7	262-8	101-4	135-9	73-7	24-5	7-8	11-0	45-2	22-7	72-2	112
113	Drivers of motor vehicles and steam wagons	862	28-2	139-1	128-1	31-5	128-6	10-7	27-3	136-9	123-3	60-9	59-4	131-7	41-7	71-4	56-6	14-1	8-8	6-2	23-6	23-3	42-3	113
114	Tram drivers	875	55-1	165-4	157-1	41-9	113-4	14-0	12-5	153-9	117-8	49-2	68-6	132-4	49-6	66-7	32-9	12-2	3-5	5-1	24-1	8-8	12-8	114
115	Omnibus and tram conductors	990	29-9	233-6	232-0	6-7	169-8	13-8	18-9	136-8	147-1	51-1	59-0	166-4	59-3	87-8	70-5	15-9	19-7	—	45-3	22-3	13-8	115
116	Grooms and horse keepers	1,046	30-7	170-1	158-9	38-8	138-9	3-5	44-6	158-0	139-5	81-7	57-8	184-3	53-7	110-8	56-4	13-9	7-8	9-5	36-2	32-4	51-0	116
117	Bargemen and boatmen	1,290	61-1	195-9	185-6	58-1	159-6	7-7	61-6	198-2	172-9	88-7	84-2	192-2	66-6	103-1	42-5	17-0	5-4	6-2	40-7	11-0	146-5	117
118	Stewcocks	1,619	24-1	374-7	364-9	48-1	188-9	7-5	34-7	194-4	164-6	93-2	71-4	354-4	93-2	207-1	89-6	51-6	18-4	6-1	54-3	56-5	66-2	118
119	Coal boat loaders and dischargers	1,231	57-7	166-4	166-4	48-3	174-7	12-4	43-9	207-7	163-0	76-8	86-2	290-2	98-3	166-7	39-0	11-7	—	11-4	40-4	11-7	64-9	119
120	Other dock labourers	1,532	42-3	328-4	311-2	51-0	182-7	6-8	55-3	202-7	172-5	86-0	86-5	322-0	124-3	170-6	79-1	25-8	5-8	12-5	40-3	26-6	72-9	120
121	Messengers, hall porters, lift attendants, &c.	1,200	37-4	282-2	264-6	40-3	149-4	5-3	38-1	196-2	175-2	102-0	73-2	174-2	107-8	110-8	70-3	26-4	3-2	8-1	26-6	22-6	47-0	121
122	Porters	1,497	47-6	305-7	294-3	51-1	198-8	9-9	49-5	230-1	198-7	90-1	108-6	280-4	107-9	152-3	84-9	28-9	11-1	7-5	34-1	28-0	50-4	122
123	Proprietors and managers of wholesale or retail dealing businesses	1,029	38-6	151-7	134-3	28-9	117-5	18-1	49-0	178-8	148-9	62-8	86-1	139-6	87-1	139-6	76-6	13-7	14-9	19-6	44-4	39-4	35-3	123
123a	Proprs., &c., of businesses for sale of fish, meat, green-grocery, milk	1,175	43-2	163-4	149-9	32-9	137-4	22-3	57-4	214-3	186-1	78-6	107-5	171-9	47-9	103-9	82-2	12-6	12-2	23-2	55-5	39-4	35-7	123a
123b	Proprs., &c., of businesses for the sale of grocery and provisions	955	38-0	128-1	105-7	23-6	111-6	21-6	50-9	187-6	132-4	68-3	84-1	120-2	23-7	81-0	82-9	20-4	10-6	14-3	49-0	29-2	20-0	123b
124	Proprs., &c., of businesses for the sale of textiles and clothing	941	34-4	152-5	132-1	24-9	106-9	9-8	49-4	160-0	126-2	51-3	74-9	119-8	26-2	74-0	71-3	9-9	11-2	18-7	40-6	35-0	28-6	123c
124a	Salesmen and shop assistants	973	34-7	193-3	178-0	29-2	117-7	17-8	45-2	162-2	138-5	69-4	69-1	133-1	49-1	71-6	52-7	12-8	7-0	11-7	32-9	23-7	27-6	124
124b	Salesmen, &c., in businesses for sale of fish, meat, green-grocery, milk	1,280	42-5	198-8	184-1	39-5	156-6	24-8	47-4	231-1	197-4	92-1	105-3	206-4	87-0	104-9	66-0	15-2	8-7	15-1	51-7	28-9	33-3	124a
124c	Salesmen, &c., in businesses for the sale of grocery and provisions	932	28-8	229-0	211-1	20-3	93-2	23-2	50-1	143-9	121-6	64-7	56-9	117-4	36-2	72-4	50-8	19-5	4-6	13-0	28-4	25-8	24-8	124b
125	Salesmen, &c., in businesses for the sale of textiles and clothing	1,069	30-2	236-7	211-0	24-1	162-3	15-8	40-4	170-9	146-1	72-3	73-8	134-6	54-6	62-8	48-6	13-7	8-1	8-4	28-2	25-3	38-5	124c
126	Commercial travellers	1,108	32-5	174-4	165-1	44-5	157-7	19-4	49-7	186-3	153-3	72-1	81-2	130-0	29-4	83-7	83-7	14-2	17-7	20-6	40-5	36-8	48-6	125
127	Canvassers, roundsmen, and van salesmen	877	35-9	169-4	162-4	28-9	120-3	1-9	30-8	143-6	133-8	68-2	65-6	135-2	43-4	72-8	73-0	12-7	1-1	7-6	30-2	23-9	41-7	126
128	Costermongers hawkers and street sellers	1,660	39-6	396-1	374-2	61-9	155-1	11-5	46-0	236-1	201-4	92-5	108-9	331-6	133-4	168-4	75-3	19-3	5-4	15-1	51-9	31-5	25-9	127
129	Bank officials	603	29-2	47-3	47-3	5-6	74-5	4-4	37-8	104-4	86-2	21-2	65-0	75-4	9-0	59-7	78-5	20-4	23-6	14-6	32-0	9-4	—	128
130	Insurance officials	585	32-9	58-4	58-4	12-3	79-2	19-8	33-3	96-3	63-8	14-6	49-2	86-3	10-9	46-0	55-2	8-4	14-9	5-0	24-8	12-2	23-4	129
131	Insurance agents and canvassers	1,039	47-8	286-3	256-5	22-4	107-5	12-1	41-0	146-5	127-3	24-9	58-1	123-6	44-2	59-0	59-0	17-9	12-1	4-9	33-9	33-0	28-4	130
132	Auctioneers, appraisers, valuers	1,031	35-9	133-0	121-4	37-3	137-2	26-8	23-8	175-3	131-7	53-2	78-5	102-0	15-3	78-4	79-8	13-8	21-3	22-1	39-5	41-6	59-9	131
133	Civil service officials and clerks	739	23-8	138-6	128-9	20-0	109-1	14-2	44-5	116-3	93-0	41-5	51-5	84-2	20-0	45-6	61-7	21-9	11-6	8-5	36-6	22-5	25-2	132
133	Local authority officials and clerks	776	32-7	141-1	125-2	18-3	98-8	13-2	44-5	116-3	93-0	41-5	51-5	84-2	20-0	45-6	61-7	21-9	11-6	8-5	36-6	22-5	25-2	133
134	Clergymen (Anglican Church)	561	18-8	54-9	52-5	3-1	67-7	9-5	28-4	109-2	77-4	24-8	52-6	63-2	6-8	47-3	54-7	16-2	13-3	5-0	26-2	24-5	27-5	134
135	Roman Catholic priests; monks	780	35-6	100-3	89-1	—	92-9	19-7	56-0	150-8	130-4	29-8	47-3	107-8	—	87-4	40-8	11-1	9-3	—	59-8	—	48-3	135
136	Ministers of other religious bodies	639	28-6	49-7	42-2	2-3	63-3	16-0	25-5	171-9	134-7	46-6	88-1	60-5	7-5	35-8	68-4	11-3	20-6	5-1	31-1	6-9	15-0	136
137	Barristers	1,171	6-2	40-4	40-4	21-8	156-7	16-0	31-7	276-2	229-9	65-0	164-9	105-0	6-2	83-0	285-3	172-6	52-8	6-2	56-2	30-8	37-2	137
138	Solicitors	899	22-4	92-5	86-0	25-9	125-3	11-5	46-7	152-3	105-7	38-4	67-3	121-4	11-5	91-6	84-0	10-0	16-7	26-2	36-6	40-2	20-3	138
139	Registered medical practitioners	1,021	46-5	81-6	75-6	24-7	101-8	19-0	44-7	142-5	105-1	27-8	77-3	154-0	14-9	123-9	94-7	15-8	14-0	17-8	47-3	48-9	81-8	139
140	Dentists	910	21-3	127-6	123-1	22-4	90-1	29-2	20-2	132-5	98-0	56-4	41-6	115-7	14-9	87-5	105-5	12-5	7-9	39-6	49-7	42-0	48-4	140
141	Teachers (not music teachers)	1,008	37-9	119-3	119-3	36-7	119-3	9-0	27-8	144-7	144-7	38-1	70-1	109-2	31-9	68-6	87-9	20-6	9-7	29-2	40-7	27-0	26-6	141
142	Music teachers	1,096	36-5	152-3	152-3	44-6	125-2	18-7	36-3	176-6	144-0	86-8	57-2	224-1	33-3	138-5	81-1	9-3	8-8	14-8	28-6	8-5	41-0	142
143	Civil engineers and surveyors	752	31-1	97-1	84-9	25-7	101-7	17-9	36-3	176-6	144-0	86-8	57-2	224-1	33-3	138-5	81-1	9-3	8-8	14-8	28-6	8-5	41-0	143
144	Architects																							

TABLE D.—STANDARDIZED MORTALITY (COMPARATIVE MORTALITY FIGURES) OF MALES AGED 20-65 YEARS IN CERTAIN OCCUPATIONS, FROM ALL CAUSES AND FROM CERTAIN SELECTED CAUSES, COMPARED WITH THAT OF ALL OCCUPIED AND RETIRED CIVILIAN MALES TAKEN AS 1000—1921-23.

NOTE.—The numbers of deaths upon which these calculations are based are in some cases very small, and reference should be made to the Abstracts, pp. 1-116, which show for each occupation the numbers of deaths from the several causes and the years of life at risk.

Occupation Group Number.	Occupation.	All Causes.	Influenza.	Tuberculosis (all forms).	Respiratory tuberculosis.	Syphilis, &c. (38, 72, 76 and 91A).	Cancer (all sites).	Diabetes.	Cerebral hæmorrhage, &c. (74 and 75A).	Diseases of the circulatory system.	Disease of the heart.	Valvular disease of heart.	Other heart disease.	Diseases of the respiratory system.	Bronchitis.	Pneumonia (100 and 101).	Diseases of the digestive system.	Peptic ulcer (111).	Appendicitis.	Cirrhosis of liver.	Chronic nephritis.	Suicide.	Accident.	Group Number.
1	All Males	1,013	1,003	1,030	1,030	1,066	995	992	1,011	1,001	998	1,008	989	997	988	1,001	1,032	1,044	1,000	1,021	1,017	1,021	1,020	—
2	All Occupied and Retired Civilian Males	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	—
3	Social Class I (Upper and Middle)	812	835	508	489	727	798	648	1,000	930	820	569	1,062	634	256	828	1,274	905	1,000	1,000	1,000	1,000	1,000	—
4	Social Class II (Intermediate)	942	937	855	844	911	920	854	1,029	1,012	998	902	1,091	759	948	841	1,225	905	1,000	1,000	1,000	1,000	1,000	—
5	Social Class III (Skilled Workers)	951	937	855	844	911	920	854	1,029	1,012	998	902	1,091	759	948	841	1,225	905	1,000	1,000	1,000	1,000	1,000	—
6	Social Class IV (Unskilled Workers)	1,007	1,024	1,002	978	963	940	931	996	930	931	904	899	918	937	895	968	968	888	886	886	886	886	—
7	Social Class V (Unskilled Workers)	1,258	1,181	1,375	1,401	1,399	1,229	664	1,080	1,213	1,276	1,062	1,152	1,359	1,762	1,501	1,367	1,253	697	865	1,064	889	1,294	—
8	Farmers and their relatives	674	734	462	414	262	724	1,311	717	666	684	705	663	486	230	592	985	880	1,629	781	722	1,235	751	1
9	Gardeners and their labourers	707	761	757	751	520	885	648	557	744	788	853	726	488	375	528	766	810	1,090	365	577	971	434	2
10	Farm bailiffs and foremen	526	657	243	247	384	699	287	459	513	556	574	538	410	234	320	562	715	472	260	484	1,198	783	3
11	Woodmen and labourers in woods and forests	714	604	761	739	653	745	984	470	670	726	580	866	325	198	320	785	1,146	1,101	344	270	988	1,894	4
12	Agricultural labourers (including shepherds)	688	871	628	588	387	699	598	584	670	710	738	683	593	490	635	669	658	663	292	600	1,000	921	5
13	Coal mine—subordinating superintending staff	823	931	498	431	494	803	557	1,000	775	746	707	784	706	665	596	892	703	1,427	854	719	658	2,861	6
14	Coal mine—hewers and getters	938	1,102	698	686	889	822	459	971	832	832	880	785	1,146	1,425	978	775	741	809	521	684	368	2,081	7
15	Coal mine—persons conveying material to the shaft	1,204	1,335	763	769	834	810	902	1,287	1,091	1,188	1,284	1,096	1,252	1,550	1,014	1,155	987	831	656	754	1,029	4,286	8
16	Coal mine—persons making and repairing roads	1,191	1,670	876	890	852	1,072	746	1,365	1,039	1,057	1,174	945	1,317	1,419	1,155	1,035	924	674	667	765	761	3,274	9
17	Coal mine—other workers below ground	1,226	1,761	937	924	878	975	861	1,107	1,133	1,126	1,237	1,020	1,455	1,665	1,344	1,064	886	865	802	884	848	3,097	10
18-10	Coal mine—underground workers, not hewers or superintd. staff	1,203	1,599	854	847	863	982	852	1,227	1,102	1,118	1,230	1,009	1,357	1,560	1,196	1,094	924	843	760	852	885	3,412	8-10
19	Coal mine—workers above ground, not superintending staff	1,183	1,717	1,033	978	923	882	787	1,401	1,360	1,360	1,637	1,091	1,437	1,784	1,215	1,195	854	640	729	977	794	1,434	11
20	Coal miners, not superintending staff	1,034	1,305	769	755	871	871	639	1,094	963	978	1,071	887	1,231	1,488	1,067	859	797	764	583	739	856	2,365	12
21	Iron ore mine—underground workers, not superintending staff	954	2,085	892	815	140	848	713	973	727	588	776	407	933	681	726	867	620	1,337	313	435	872	1,992	13
22	Tin and copper miners, not superintending staff	3,268	1,187	8,394	8,847	—	1,397	3,541	2,884	1,552	1,600	935	2,242	4,348	3,887	536	1,017	968	1,719	—	2,188	3,082	1,884	13
23	Tin and copper mine—underground workers, not superintd. staff	4,385	467	11,750	12,607	—	1,885	3,336	2,375	2,421	2,421	1,569	3,244	6,329	5,004	840	1,192	1,506	2,461	—	3,438	3,877	1,854	13a
24	Stone miners and quarriers	946	1,025	926	949	812	644	730	869	936	907	1,178	645	1,023	929	999	810	854	888	—	426	815	2,241	14
25	Slate miners and quarriers	944	1,209	1,575	1,594	391	715	—	550	1,075	1,116	1,417	616	702	520	451	407	911	—	284	230	1,962	1,571	15
26	Cement workers, lime burners, &c.	717	591	651	706	362	889	1,656	517	316	923	542	316	923	542	1,271	808	1,646	—	563	655	844	1,872	16
27	Brick and plain tile makers, &c.; furnace, &c., pot makers	926	1,242	1,024	1,023	1,565	868	1,369	617	969	1,009	1,107	913	1,189	1,994	763	684	1,304	—	623	901	422	1,422	17
28	Potters' mill workers; slip makers; potters	1,642	1,201	2,625	2,750	461	853	869	1,122	1,307	1,254	1,498	1,018	2,856	5,435	1,242	1,378	1,595	1,090	2,240	1,728	1,704	511	18
29	Pottery dippers, glazers, painters, decorators	1,413	1,459	1,597	1,462	—	1,519	1,041	2,318	1,585	1,585	1,889	847	1,212	1,722	1,212	1,272	1,272	2,750	2,304	1,041	1,716	420	23
30	Earthenware, china, &c., kiln and oven men	1,830	1,560	2,167	2,243	483	1,564	541	1,376	1,300	1,450	1,754	2,122	2,935	4,895	1,659	1,109	1,636	1,708	1,135	1,041	1,543	329	23a
31	Brick, tile, etc., kiln and oven men	878	920	697	706	782	796	516	1,202	963	1,014	1,227	808	1,061	1,347	756	334	430	708	—	2,026	1,522	621	19
32	Other persons engaged in the manuf. of bricks, tiles, and pottery	1,243	1,354	1,108	1,075	926	1,088	1,320	1,207	1,271	1,234	1,246	1,223	1,673	2,643	1,145	1,266	2,095	1,461	500	1,096	1,144	1,369	20
33	Skilled glasshouse workers	1,170	1,352	1,439	1,439	712	1,305	3,590	967	1,146	1,069	1,254	895	1,594	2,651	991	708	873	876	885	1,041	1,716	420	23
34	Glass blowers and finishers; not machine hands	1,314	662	1,400	1,400	1,015	1,510	3,795	967	1,102	976	1,090	866	1,836	3,218	1,836	946	978	1,114	1,688	1,403	1,543	329	23b
35	Other skilled glass workers	1,417	1,797	1,747	1,805	1,559	1,397	2,574	1,804	1,040	902	927	878	1,976	2,498	1,723	402	418	618	542	1,632	1,523	594	24
36	Chemical workers	878	1,151	755	757	720	1,245	721	575	782	813	800	826	1,016	1,317	961	892	532	1,506	792	504	436	1,262	25
37	Makers of paint, oil, soap, grease, &c.	918	1,165	882	859	613	1,000	549	1,167	952	1,000	991	1,009	977	1,167	751	782	513	1,157	250	771	453	976	26
38	Persons engaged in smelting, rolling, converting of iron and steel	1,025	1,346	882	890	646	1,156	672	915	848	798	820	776	1,445	1,288	2,538	896	899	753	813	693	963	1,238	27
39	Puddlers	1,250	819	980	886	465	1,597	434	1,385	773	706	792	623	2,103	2,685	2,032	926	1,101	1,169	1,208	1,075	965	572	27a
40	Metal moulders	1,137	1,412	1,051	1,070	705	1,238	910	1,245	982	986	950	1,021	1,655	1,724	1,709	997	854	1,562	302	1,397	807	712	28
41	Iron foundry, furnacemen and labourers	1,116	1,788	963	1,012	705	1,047	893	817	1,040	966	1,060	873	1,966	1,821	2,270	617	766	1,677	1,854	1,055	1,045	773	29
42	Brass foundry furnacemen and labourers	1,530	2,212	2,118	2,123	1,373	1,061	836	2,056	1,363	1,257	986	1,520	2,110	1,990	2,492	1,356	1,677	2,079	1,854	1,055	1,045	773	30
43	Smiths and skilled forge workers	951	995	874	867	886	1,117	1,213	902	915	878	987	773	1,053	1,157	1,047	862	949	674	740	910	864	651	31
44	Machine tool workers and metal spinners	964	898	1,080	1,016	886	1,062	762	1,214	960	943	1,008	880	974	1,022	928	845	892	827	951	881	881	424	32
45	Fitters, tool setters, millwrights, and similar occupations	932	819	946	954	1,137	945	885	1,165	949	920	989	854	783	679	816	955	924	1,032	846	962	827	966	33
46	Boiler makers and fitters, and their labourers	968	882	935	954	1,137	945	885	1,118	976	958	1,080	840	1,020	984	1,053	1,119	1,222	1,124	625	916	1,045	915	34
47	Brass finishers and turners	1,293	1,588	1,999	2,061	1,531	1,455	639	1,111	848	820	948	697	1,569	1,770	1,543	1,129	1,671	1,135	1,583	1,099	1,481	469	35
48	Coppersmiths	1,084	1,593	1,779	1,779	734	849	—	2,644	595	616	961	1,035	804	226	953	1,170	1,063	1,258	1,167	2,730	—	574	36
49	Cutlers	1,287	670	2,075	2,075	672	1,129	705	987	1,449	1,285	1,471	893	1,471	893	1,557	1,161	1,209	1,258	1,167	2,730	—	574	37
50	File makers	1,084	1,593	1,779	1,779	734	849	—	2,644	595	616	961	1,035	804	226	953	1,170	1,063	1,258	1,167	2,730	—	574	38
51	Gas fitters and pipe fitters	975	2,071	2,407	2,407	701	1,181	2,148	2,673	1,363	1,312	1,852	1,791	2,023	3,298	1,043	1,054	1,209	1,258	1,167	2,730	—	574	39
52	Metal grinders	1,977	1,685	4,117	4,256	1,210	1,503	1,582	1,514	1,423	1,429	1,057	1,788	2,457	3,155	1,885	1,086	715	1,348	1,010	1,017	1,276	779	40

402	Grinders in the currier trade	1,225	1,181	1,079	1,065	2,041	731	3,475	722	1,380	1,278	1,126	1,425	1,257	1,024	1,643	1,082	3,108	1,719	—	1,246	3,214	566	50
41	Metal glazers, polishers, buffers, and moppers	1,437	1,918	2,024	2,124	1,125	1,376	839	1,367	1,263	1,356	973	1,726	1,884	2,028	1,096	1,468	1,652	438	1,270	1,132	227	41	
42	Plumbers	1,437	937	843	723	839	743	839	743	839	743	839	743	839	743	839	743	839	743	839	743	839	42	
43	Riveters and their labourers	1,062	1,005	1,151	1,175	1,697	935	639	1,274	976	955	959	911	1,326	1,353	797	1,086	944	117	1,181	1,230	760	41	
44	Thimblers and sheet metal workers	1,011	1,159	1,224	1,247	919	1,062	1,205	967	961	1,009	886	1,128	1,096	829	1,333	709	1,108	798	115	1,052	790	44	
45	Gold, silver, and white metal smiths	961	420	1,081	1,083	1,266	1,237	762	873	977	984	976	992	1,036	919	988	771	772	292	333	1,096	979	619	
46	Electrical engineers, fitters, and wiremen	1,042	1,025	1,097	1,097	1,565	1,014	885	967	1,108	1,044	1,046	1,043	887	794	933	1,215	1,544	910	1,479	780	1,099	46	
47	Makers of watches, clocks, scientific and electrical instruments	804	1,058	1,012	1,026	587	823	659	878	915	628	1,192	1,192	446	411	458	714	1,038	416	250	1,414	1,527	181	
48	Skilled lime and tanyard workers, curriers, and leather dressers	1,111	1,041	1,041	1,041	1,041	1,041	1,041	1,041	1,041	1,041	1,041	1,041	1,041	1,041	1,041	1,041	1,041	1,041	1,041	1,041	1,041	48	
49	Skilled leather goods makers	887	1,069	1,084	982	749	644	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	49	
50	Wool sorters	1,225	1,181	1,079	1,065	2,041	731	3,475	722	1,380	1,278	1,126	1,425	1,257	1,024	1,643	1,082	3,108	1,719	—	1,246	3,214	566	50
51	Cotton blow room operatives—skilled	1,516	692	691	691	750	469	1,080	3,238	2,178	1,536	1,526	1,688	1,370	2,278	2,583	2,983	2,053	270	51	2,583	2,053	270	51
52	Rag grinders, wool willowers, &c.	1,198	962	1,046	1,093	1,181	1,229	557	2,178	1,229	1,295	927	1,649	895	1,575	796	2,238	1,374	414	708	2,238	1,374	414	52
53	Cotton card and frame (not spinning frame) tenters	1,601	1,876	1,107	1,057	321	1,420	790	3,065	1,914	2,017	1,730	1,869	2,071	1,647	1,811	1,292	3,589	1,213	—	2,119	1,823	1,168	53
54	Wool, worsted card comb or frame (not spinning frame) tenters	1,373	1,069	1,084	982	749	644	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	54
55	Cotton strippers and grinders and card room jobbers	1,396	2,121	792	796	956	864	1,180	1,321	1,524	1,650	2,063	1,252	2,856	5,579	1,593	882	1,342	—	—	1,612	786	1,008	55
56	Cotton spinners and piecers	1,248	1,058	687	1,072	616	1,648	861	1,423	1,375	1,387	1,494	1,284	1,273	1,431	1,180	1,292	1,000	1,281	—	813	1,305	420	56
57	Wool and worsted spinners and piecers	1,103	654	929	898	—	1,278	1,410	1,412	1,087	1,229	1,192	1,265	788	514	1,011	1,245	791	2,607	—	2,656	2,896	765	57
58	Cotton—doublers, winders, wagers, beamers, &c.	1,236	1,332	1,060	869	494	1,249	582	1,314	1,426	1,509	1,465	1,572	1,560	1,454	1,022	899	—	1,104	1,162	1,486	430	58	
59	Wool and worsted—doublers, winders, wagers, beamers, &c.	970	571	655	510	1,332	1,061	2,041	1,434	1,568	1,502	1,442	1,559	785	790	610	1,139	304	3,034	—	813	1,487	1,551	59
60	Cotton weavers	1,048	1,080	771	731	613	982	1,180	1,641	1,253	1,253	1,413	1,098	1,075	1,651	824	1,139	1,000	1,247	260	1,243	1,379	223	60
61	Woollen and worsted weavers	1,082	283	2,277	1,162	258	1,007	2,566	918	1,480	1,396	1,666	1,136	672	845	471	1,380	1,266	978	938	1,539	288	276	61
62	Weavers of other textiles	888	409	979	904	284	783	738	1,463	1,143	1,244	1,024	1,457	751	575	868	713	373	865	—	1,455	502	682	62
63	Hosiery frame tenters and machine knitters	929	728	909	741	830	928	982	1,087	936	665	639	691	746	694	610	1,139	304	—	2,625	1,365	2,263	63	
64	Dye mixers and dyers	1,304	1,794	1,235	1,216	930	1,085	1,996	1,096	1,418	1,464	1,377	1,548	2,004	1,342	1,405	1,589	1,112	3,034	—	813	1,487	1,551	64
65	Scourers (woollen, worsted and hosiery), calenders and finishers	1,015	929	1,006	998	303	1,061	1,418	1,138	1,174	1,196	1,315	1,081	1,060	1,373	1,024	906	506	1,124	385	1,455	490	385	65
66	Cutters of textile goods and clothing (not machine cutters)	1,168	214	1,911	1,878	1,251	1,026	885	1,041	1,048	1,158	1,290	1,029	1,197	1,024	1,261	1,012	1,589	—	417	1,475	704	351	66
67	Tailors; tailors' pressers and machinists	1,015	747	1,419	1,421	1,196	889	1,008	1,045	1,130	1,157	1,016	1,256	889	1,091	765	980	1,177	933	479	1,049	1,218	320	67
68	Hat formers, planers, stiffeners	1,396	945	1,792	1,735	808	1,619	1,197	1,532	1,658	1,850	1,368	2,317	1,409	1,137	1,316	1,395	1,335	—	2,510	1,530	300	564	68
69	Boot and shoe makers and repairers (not factory workers)	1,014	871	1,430	1,307	1,004	838	623	996	1,047	1,147	951	1,007	1,129	902	925	1,158	360	750	889	1,239	375	69	
70	Boot and shoe clickers and cutters	1,104	808	1,795	1,820	882	1,055	779	1,461	1,283	1,301	1,254	1,346	794	1,016	687	845	918	865	1,083	1,142	391	343	70
71	Skilled boot and shoe operatives, not clickers or cutters	1,120	772	773	1,271	1,196	958	1,074	1,767	1,047	1,169	1,231	1,069	1,048	1,060	989	1,097	1,778	1,247	656	858	1,251	176	71
72	Grain millers	785	937	784	714	587	688	1,221	717	719	769	393	1,133	922	847	978	713	222	1,034	823	432	1,494	903	72
73	Bakers and pastry cooks	864	973	1,011	1,016	775	987	1,016	673	855	880	879	822	904	764	978	677	842	326	625	667	1,074	450	73
74	Brewers of ale, stout, and porter	1,346	637	651	706	4,808	1,398	1,016	2,245	1,274	1,126	1,230	1,024	924	1,298	945	3,133	2,633	4,674	8,000	1,620	2,050	1,582	74
75	Cellarmen	1,510	1,863	1,491	1,577	1,697	1,801	—	880	1,562	1,636	1,230	2,029	1,365	1,879	947	1,857	2,418	—	4,698	1,930	1,621	1,329	75
76	Tobacco factory operatives	1,150	843	1,383	2,002	989	1,238	2,262	528	1,472	1,253	1,478	1,035	769	730	845	1,472	1,892	730	1,000	470	963	174	76
77	Foremen and overlookers (wood working)	620	832	417	1,435	325	843	716	749	497	470	576	367	483	359	548	469	1,890	989	—	1,322	379	580	77
78	Cabinet makers	1,026	852	1,234	1,208	886	1,218	1,166	1,089	1,057	1,034	860	1,203	980	1,300	818	825	1,089	708	375	1,678	1,222	458	78
79	Carpenters, coach builders, pattern makers and similar occupations	843	838	884	865	850	850	820	900	843	843	874	777	717	681	736	797	829	955	510	954	765	647	79
80	French polishers	1,230	555	1,632	1,641	1,306	1,257	885	1,183	1,140	1,058	923	1,189	1,336	1,494	1,183	1,158	2,184	685	688	1,428	546	80	
81	Sawyers; wood turners and machinists	868	912	937	978	849	1,099	762	688	875	897	924	774	792	694	791	1,169	917	588	1,037	1,588	817	817	81
82	Upholsters, coach trimmers and bedding makers	864	709	1,245	1,262	642	1,107	1,213	762	825	865	992	740	766	849	791	659	778	802	446	271	739	802	82
83	Paper mill workers	761	602	660	634	605	889	1,500	673	792	800	1,112	498	705	266	824	689	329	337	365	1,035	951	868	83
84	Hand compositors	1,007	1,080	1,288	1,289	941	960	1,369	1,096	1,047	1,057	847	1,261	851	1,062	776	1,000	823	1,393	781	1,258	416	365	84
85	Machine compositors	867	327	1,252	1,320	857	640	975	392	1,191	1,175	838	1,502	1,001	839	1,092	889	1,867	—	615	339	477	598	85
86	Photographers	882	948	1,012	970	915	685	1,631	920	1,079	1,109	782	1,425	602	413	857	830	910	1,045	913	1,045	517	86	
87	Printing machine minders and assistants; machine rulers	1,008	893	1,261	1,247	1,063	963	967	1,020	1,084	1,057	1,062	1,053	925	1,079	925	887	839	899	438	930	782	503	87
88	Bookbinders and pattern card makers	1,098	997	1,143	1,209	1,531	1,505	1,123	386	1,079	1,069	1,390	759	1,019	1,024	938	1,266	2,161	1,101	542	655	1,317	176	88
89	Employers, managers in building, &c, trades; clerks of works	1,005	805	655	660	675	1,086	1,213	1,445	1,202	1,172	1,039	1,172	792	714	769	1,178	1,165	1,101	1,281	1,441	1,128	1,247	89
90	Foremen and gangers (building and contracting)	732	761	226	221	653	752	1,098	806	811	819	1,041	605	721	530	793	795	1,035	970	844	939	663	2,089	90
91	Bricklayers	854	684	758	778	945	1,025	998	771	894	905	1,027	788	943	863	980	824	874	764	832	730	720	957	91
92	Plasterers	1,011	824	861	881	1,041	1,266	648	951	994	1,030	950	1,165	1,046	1,236	860	1,063	1,063	973	1,246	844	1,189	92	
93	Slaters and tilers	1,037	547	1,038	1,003	779	1,434	1,041	900	1,044	1,136	1,727	564	1,094	68									

TABLE D—STANDARDIZED MORTALITY (COMPARATIVE MORTALITY FIGURES) OF MALES AGED 20-65 YEARS IN CERTAIN OCCUPATIONS, FROM ALL CAUSES AND FROM CERTAIN SELECTED CAUSES, COMPARED WITH THAT OF ALL OCCUPIED AND RETIRED CIVILIAN MALES TAKEN AS 1000—1921-23—continued.

NOTE.—The numbers of deaths upon which these calculations are based are in some cases very small, and reference should be made to the Abstracts, pp. 1-116, which show for each occupation the numbers of deaths from the several causes and the years of life at risk.

Occupation Group Number.	OCCUPATION.	All Causes.																			Group Number.		
		Influenza.	Tuberculosis (all forms).	Respiratory tuberculosis. (91A). (38, 72, 76 and 91A).	Cancer (all sites).	Diabetes.	Cerebral hemorrhage, &c. (74 and 75A).	Diseases of the circulatory system.	Disease of the heart.	Valvular disease of heart.	Other heart disease.	Diseases of the respiratory system.	Bronchitis.	Pneumonia (100 and 101).	Diseases of the digestive system.	Peptic ulcer (111).	Appendicitis.	Cirrhosis of liver.	Chronic nephritis.	Suicide.		Accident.	
110	Railway porters and lampmen	1,023	1,258	1,114	1,150	1,255	1,081	1,213	1,013	853	873	916	1,039	1,341	845	872	1,519	674	490	1,067	605	1,065	110
111	Livery stable and motor garage proprietors, &c., haulage contractors	791	1,001	578	602	742	776	713	659	865	838	933	778	911	703	1,082	1,629	1,629	1,375	855	1,428	1,055	111
112	Drivers of horse-drawn vehicles	862	1,272	1,309	1,312	1,542	1,432	1,108	1,316	1,328	1,355	1,322	1,732	2,044	1,597	1,239	1,581	876	1,146	1,310	1,934	1,465	112
113	Drivers of motor vehicles and steam wagons	875	1,378	785	783	1,162	1,002	877	908	899	933	905	868	841	859	951	892	969	646	684	959	858	113
114	Tram drivers	990	1,514	933	961	1,546	883	1,148	1,011	913	776	1,046	873	1,000	784	553	772	531	639	362	260	114	
115	Omnibus and tram conductors	921	1,318	1,419	1,419	247	1,322	1,131	421	899	853	899	1,097	1,196	1,032	1,185	1,006	2,213	—	1,313	918	280	115
116	Grooms and horse keepers	1,046	843	959	972	1,432	1,082	287	933	1,038	1,081	1,289	1,215	1,083	1,302	948	880	990	1,049	1,353	1,034	116	
117	Bargemen and boatmen	1,290	1,679	1,105	1,355	2,144	1,243	635	1,372	1,340	1,399	1,284	1,267	1,343	1,212	714	1,076	607	646	1,180	453	117	
118	Stewards	1,619	670	2,113	2,232	1,775	1,471	615	773	1,277	1,276	1,470	2,336	2,052	2,434	1,506	3,266	2,067	635	1,574	2,325	118	
119	Coalboat loaders and dischargers	1,231	1,585	939	1,018	1,782	1,361	1,016	978	1,365	1,264	1,211	1,913	1,982	1,959	655	741	1,188	1,171	481	1,316	119	
120	Other dock labourers	1,532	1,622	1,852	1,903	1,882	1,423	557	1,232	1,337	1,356	1,319	2,123	2,506	2,005	1,329	1,633	652	1,302	1,168	1,095	120	
121	Messengers, hall porters, lift attendants, &c.	1,200	1,027	1,192	1,618	1,487	1,164	434	849	1,089	1,097	1,116	1,148	940	1,302	1,182	1,671	830	844	771	930	121	
122	Porters	1,497	1,208	1,724	1,799	1,886	1,556	811	1,102	1,540	1,421	1,655	1,548	1,929	1,790	1,427	1,829	1,247	781	938	1,152	122	
123	Proprietors and managers of wholesale or retail dealing businesses	1,029	1,060	856	921	1,066	915	1,484	1,091	1,175	1,554	1,312	920	681	1,024	1,287	867	1,674	2,042	1,287	1,621	123	
123a	Proprs., &c., of businesses for sale of fish, meat, greengrocery, milk	1,175	1,187	922	917	1,214	1,070	1,828	1,278	1,408	1,443	1,639	1,133	966	1,221	1,382	791	2,417	1,609	1,621	724	123a	
123b	Proprs., &c., of businesses for the sale of grocery and provisions	955	1,044	723	646	871	869	1,770	1,134	1,233	1,181	1,077	792	478	952	1,393	1,291	1,191	1,490	1,202	406	123b	
123c	Proprs., &c., of businesses for the sale of textiles and clothing	941	893	860	908	919	863	1,003	1,000	1,051	1,078	1,142	790	528	870	1,198	627	1,288	1,948	1,440	580	123c	
124	Salesmen and shop assistants	973	953	1,090	1,089	1,077	917	1,459	1,007	1,066	1,074	1,095	1,053	996	841	886	810	856	1,216	954	975	124	
124a	Salesmen, &c., in businesses for sale of fish, meat, greengrocery, milk	1,280	1,168	1,121	1,126	1,458	1,220	2,033	1,501	1,518	1,530	1,453	1,605	1,361	1,233	1,109	962	978	1,573	1,499	1,189	124a	
124b	Salesmen, &c., in businesses for the sale of grocery and provisions	932	791	1,292	289	749	726	1,902	1,116	945	943	1,021	867	774	730	851	1,234	517	1,354	1,062	503	124b	
124c	Salesmen, &c., in businesses for the sale of textiles and clothing	1,069	890	1,335	1,291	889	1,264	1,295	900	1,123	1,133	1,140	1,125	887	910	738	817	867	910	1,041	781	124c	
125	Commercial travellers	1,108	983	954	1,010	1,642	1,228	1,390	1,107	1,224	1,188	1,137	1,238	857	984	1,407	899	1,989	2,146	1,174	1,514	125	
126	Canvassers, roundmen and van salesmen	877	986	955	993	1,066	937	156	686	943	1,037	1,076	1,000	891	901	855	804	124	792	984	846	126	
127	Costermongers hawkers and street sellers	1,660	1,088	2,234	2,389	2,284	1,208	943	1,024	1,551	1,459	1,660	2,186	2,690	1,979	1,266	1,222	607	1,573	1,504	1,296	127	
128	Bank officials	603	802	267	289	207	580	361	842	686	668	334	991	497	181	702	1,319	1,291	2,652	1,521	928	387	128
129	Insurance officials	585	904	329	357	454	617	1,623	742	633	495	230	750	437	220	541	928	532	521	502	475	129	
130	Insurance agents and canvassers	1,039	913	1,615	1,569	827	837	992	913	963	987	1,091	886	815	891	679	922	1,133	1,360	510	983	130	
131	Auctioneers, appraisers, valuers	1,031	986	750	743	1,376	1,069	2,197	962	1,152	1,021	1,197	672	308	921	1,341	873	2,393	2,302	1,145	1,712	131	
132	Civil Service officials and clerks	739	684	782	788	738	850	1,074	610	817	791	685	535	437	536	876	888	740	759	770	742	132	
133	Local authority officials and clerks	776	898	796	766	675	769	1,164	991	764	721	655	785	555	403	595	1,037	1,386	1,303	885	926	511	133
134	Clergymen (Anglican Church)	561	516	310	321	114	527	779	633	717	600	391	802	417	137	556	919	1,025	1,494	521	1,008	558	134
135	Roman Catholic priests; monks	780	978	566	545	—	724	1,533	991	1,011	472	1,532	711	—	1,027	686	703	1,045	—	1,733	—	980	135
136	Ministers of other religious bodies	639	786	280	258	439	—	1,311	1,125	1,044	785	1,343	399	151	421	1,150	715	2,315	531	901	284	304	136
137	Barristers	1,171	170	228	247	804	1,220	706	1,815	1,782	1,025	2,514	692	125	475	4,795	10,924	5,933	646	1,629	755	1,318	137
138	Solicitors	899	615	522	526	956	976	943	1,040	1,001	819	606	1,026	800	232	1,076	1,412	633	1,876	1,061	1,654	412	138
139	Registered medical practitioners	1,021	1,277	460	462	911	793	1,557	996	936	815	438	1,178	1,015	300	1,456	1,592	1,000	1,573	1,854	2,012	1,659	139
140	Dentists	910	585	720	753	827	702	2,393	450	895	880	694	763	300	1,028	1,430	1,857	791	4,125	1,441	1,728	982	140
141	Teachers (not music teachers)	736	1,071	642	628	413	763	1,164	844	798	648	888	468	250	556	908	797	1,079	583	754	918	570	141
142	Music teachers	1,096	1,003	859	931	1,646	975	1,533	1,526	1,116	1,369	872	1,477	667	1,627	859	589	955	1,542	829	350	832	142
143	Civil engineers and surveyors	752	854	548	519	948	792	1,467	808	792	810	598	1,015	185	727	956	576	1,101	1,313	843	1,062	832	143
144	Architects	929	785	705	713	539	1,095	1,156	1,089	995	858	1,102	794	365	1,014	1,526	1,430	2,483	1,396	817	909	347	144
145	Authors, editors, journalists	1,003	806	728	1,336	1,019	721	1,287	1,122	1,114	1,129	720	794	806	1,477	1,304	1,090	3,042	1,180	1,111	540	347	145
146	Artists	1,005	1,569	1,006	1,952	1,160	738	514	966	919	1,073	1,024	1,123	751	682	563	1,674	344	2,203	967	316	146	
147	Proprietors and managers of theatres, entertainments, sports	1,020	335	1,006	972	1,041	780	779	983	989	749	1,211	446	1,230	1,424	1,316	1,921	2,438	1,171	1,572	1,181	147	
148	Actors	1,336	995	1,515	1,533	4,649	1,280	1,311	1,176	1,202	1,112	1,065	1,159	725	345	877	2,197	1,816	1,921	4,646	1,745	1,078	148
149	Musicians	475	1,332	713	2,059	1,505	1,328	784	1,366	1,367	1,418	1,241	1,200	1,274	1,276	1,025	2,011	1,396	1,078	593	905	149	
150	Domestic servants (indoor)	885	651	874	888	1,177	1,048	1,090	708	824	805	732	687	502	833	1,143	1,076	1,506	448	1,296	572	150	
151	Gamekeepers	667	646	844	772	373	939	1,254	483	369	403	281	327	157	824	1,079	313	484	1,465	955	151	151	
152	Inn, hotel—keepers, publicans	1,585	1,347	1,344	1,107	1,275	2,852	1,768	1,529	1,577	1,333	1,812	855	1,611	3,452	1,829	2,258	11,					

155	..	..	1,019	1,027	1,242	1,241	1,266	989	1,180	1,004	1,001	986	951	1,020	819	633	377	1,099	1,057	1,315	1,115	1,061	1,091	493	153
156	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
157	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
158a	..	..	937	1,201	928	954	1,373	1,124	1,109	806	912	959	875	1,040	848	625	919	1,151	1,209	1,360	781	545	1,272	434	158a
158b	..	..	920	915	1,024	1,105	830	775	1,077	1,218	911	820	815	825	817	581	902	1,181	1,063	1,607	771	846	695	312	158b
159	..	..	884	1,212	964	955	823	722	758	1,009	959	820	879	936	700	506	879	936	889	831	1,115	716	996	367	159
160	..	..	1,007	1,118	1,145	1,156	819	1,000	959	1,004	1,055	1,088	1,071	1,016	963	1,041	1,098	1,084	1,424	1,000	760	994	798	400	160
160a	..	..	1,421	1,486	2,038	2,048	1,111	1,498	2,328	1,370	1,026	1,102	1,170	1,037	1,251	1,163	1,350	1,345	2,601	2,472	708	1,272	848	458	160a
160b	..	..	1,039	832	1,235	1,266	889	889	623	1,339	1,152	1,208	1,172	1,242	1,102	869	1,222	1,461	1,715	921	2,031	957	481	347	160b
161	..	..	952	962	1,008	1,008	1,148	1,122	574	983	973	999	1,083	909	1,030	990	1,020	859	1,500	697	208	661	992	572	161
162	..	..	1,097	852	1,292	1,330	1,063	1,292	328	909	1,001	951	988	963	1,246	1,399	1,231	1,128	1,171	1,135	1,083	1,093	1,111	688	162
163	..	..	937	1,217	819	794	701	1,062	1,172	1,062	957	1,020	920	787	776	833	779	899	1,006	1,124	458	939	794	1,337	163
164	..	..	1,438	1,335	1,622	1,650	1,686	1,380	787	1,261	1,371	1,384	1,498	1,274	1,742	1,946	1,685	1,168	1,329	798	1,031	1,267	1,140	1,191	164
Clerks (not civil service or local authority); typists	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bank and insurance clerks	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Railway clerks	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Draughtsmen	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Warehousemen	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Warehousemen—textiles and clothing	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Warehousemen—cereals, provisions and dry goods	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Storekeepers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Packers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Stationary engine and crane drivers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
General and undefined labourers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

TABLE E.—MORTALITY RANK OF OCCUPATIONS AT VARIOUS AGES—MALES—1921-23.

Position of each Occupation in a list arranged for each Age in order of Mortality, from No. 1, the lowest, to No. 178, the highest.

NOTE.—The positions for age group 16-20 have been omitted because of the low mortality, and those for ages over 70 are of doubtful significance because of variation in age constitution within the Group, *see* page xi.

Occupation Group No.	OCCUPATION.	Ages 20—65.	20—	25—	35—	45—	55—	65—	70 and up- wards.
1	Farmers and their relatives	9	15	24	19	13	6	11	35
2	Gardeners and their labourers	12	87	69	17	6	9	4	22
3	Farm bailiffs and foremen	1	7	2	4	2	3	20	144
4	Woodmen and labourers in woods and forests	13	130	31	23	19	1	3	60
5	Agricultural labourers (including shepherds)	11	50	44	14	9	7	8	72
6	Coal mine—subordinate superintending staff	27	26	48	7	24	57	119	163
7	Coal mine—hewers and getters	62	46	67	57	38	96	140	98
8	Coal mine—persons conveying material to the shaft	127	122	145	141	119	127	87	123
9	Coal mine—persons making and repairing roads	124	159	139	127	122	118	84	151
10	Coal mine—other workers below ground	130	156	138	119	136	128	109	134
11	Coal mine—workers above ground, not superintending staff	123	154	142	137	110	115	75	107
12	Iron ore mine—underground workers, not superintending staff	68	103	124	62	77	45	118	140
13	Tin and copper miners, not superintending staff	176	42	177	177	176	176	166	174
13A	Tin and copper mine—underground workers, not superintending staff	178	8	178	178	178	178	178	176
14	Stone miners and quarriers	65	98	64	87	37	67	99	130
15	Slate miners and quarriers	64	10	102	18	74	110	160	132
16	Cement workers, lime burners, etc.	14	16	25	51	34	2	27	66
17	Brick and plain tile makers, etc.; furnace and crucible pot makers	53	13	56	11	47	124	136	157
18	Potters' mill workers; slip makers; potters	170	124	113	155	166	173	133	116
19	Pottery dippers, glazers, painters, decorators	156	121	12	132	169	163	150	149
20	Earthenware, china, etc., kiln and oven men	172	82	32	171	174	174	169	77
21	Brick, tile, etc., kiln and oven men	37	23	3	83	22	104	156	165
22	Other persons engaged in the manufacture of bricks, tiles, and pottery	135	103	122	140	142	137	90	156
23	Skilled glass house workers	136	109	159	102	142	136	172	145
23A	Glass blowers and finishers, not machine hands	145	91	136	145	146	141	175	111
24	Other skilled glass workers	157	148	130	146	140	165	159	100
25	Chemical workers	37	115	38	77	35	37	58	9
26	Makers of paint, oil, soap, grease, etc.	50	102	73	62	40	56	43	11
27	Persons engaged in the smelting, rolling, and converting of iron and steel	92	27	108	99	84	101	66	114
27A	Puddlers	138	79	88	24	159	153	165	167
28	Metal moulders	118	71	100	108	108	138	139	146
29	Iron foundry furnacemen and labourers	115	118	108	131	128	93	61	90
30	Brass foundry furnacemen and labourers	164	105	171	172	115	166	65	135
31	Smiths and skilled forge workers	66	70	69	57	49	90	92	83
32	Machine tool workers and metal spinners	71	49	84	76	62	84	78	101
33	Fitters, tool setters, millwrights and similar occupations	57	75	76	75	50	60	76	57
34	Boiler makers and platers and their labourers	72	75	85	56	76	85	86	74
35	Brass finishers and turners	143	142	110	162	151	108	112	148
36	Coppersmiths	107	158	153	92	91	81	121	104
37	Cutlery	140	93	96	163	147	117	137	73
38	File cutters	173	91	175	174	172	168	173	143
39	Gas fitters and pipe fitters	75	151	64	78	27	97	30	96
40	Metal grinders	175	88	141	167	175	175	174	105
40A	Grinders in the cutlery trade	177	170	176	176	177	177	171	169
41	Metal glazers, polishers, buffers, and moppers	160	167	134	160	148	155	150	82
42	Plumbers	59	51	90	37	71	66	67	43
43	Riveters and their labourers	103	120	119	130	91	72	134	172
44	Tinsmiths and sheet metal workers	83	88	47	81	99	94	71	87
45	Gold, silver, and white metal smiths	70	74	69	102	64	58	50	24
46	Electrical engineers, fitters, and wiremen	99	66	50	90	83	119	115	28
47	Makers of watches, clocks, scientific and electrical instruments	26	62	115	24	14	32	6	25
48	Skilled lime and tanyard workers, curriers, and leather dressers	114	125	148	138	88	92	83	129
49	Skilled leather goods makers	41	155	103	40	56	19	56	12
50	Wool sorters	129	162	169	134	82	134	70	37
51	Cotton blow room operatives—skilled	163	168	121	164	161	159	155	162
52	Rag grinders; wool willowers, etc.	125	172	40	136	96	139	146	155
53	Cotton card and frame (not spinning frame) tenters	168	33	166	158	153	172	148	171
54	Wool and worsted card comb, or frame (not spinning frame) tenters	151	95	152	156	149	146	123	120
55	Cotton strippers and grinders and card room jobbers	154	20	19	62	157	171	177	175
56	Cotton spinners and piecers	137	127	90	92	124	160	164	161

TABLE E.—MORTALITY RANK OF OCCUPATIONS AT VARIOUS AGES—MALES—1921-23—continued.

Occupation Group No.	OCCUPATION.	Ages 20—65.	20—	25—	35—	45—	55—	65—	70 and up- wards.
57	Wool and worsted spinners and piecers	111	160	49	54	119	129	129	106
58	Cotton—doublers, winders, warpers, beamers, etc. ..	134	132	112	122	135	143	162	164
59	Wool and worsted—doublers, winders, warpers, beamers, etc.	73	136	135	20	41	88	21	90
60	Cotton weavers	101	75	53	35	64	142	149	118
61	Woollen and worsted weavers	106	125	66	125	57	131	152	166
62	Weavers of other textiles	42	25	34	48	60	54	60	168
63	Hosiery frame tenters and machine knitters	54	123	42	31	54	79	2	112
64	Dye mixers and dyers	144	112	161	135	131	152	143	137
65	Scourers (woollen, worsted and hosiery); calenderers and finishers	86	45	111	128	52	90	153	125
66	Cutters of textile goods and clothing (not machine cutters)	120	164	146	73	133	116	51	133
67	Tailors; tailors' pressers and machinists	86	65	123	114	90	55	42	5
68	Hat formers, plunkers, stiffeners	154	171	157	154	139	148	144	152
69	Boot and shoe makers and repairers (not factory workers)	85	116	150	124	95	23	18	20
70	Boot and shoe clickers and cutters	112	129	174	94	81	74	104	117
71	Skilled boot and shoe operatives—not clickers or cutters	116	153	139	113	93	107	142	121
72	Grain millers	23	33	15	22	11	64	44	109
73	Bakers and pastry cooks	31	96	50	45	53	29	19	8
74	Brewers of ale, stout, and porter	149	14	154	33	163	162	158	95
75	Cellarmen	162	150	154	168	144	161	97	97
76	Tobacco factory operatives	119	166	128	5	155	113	48	30
77	Foremen and overlookers (wood working)	5	47	9	1	12	12	54	58
78	Cabinet makers	93	96	60	73	102	98	69	56
79	Carpenters, coachbuilders, pattern makers, and similar occupations	28	69	39	32	38	42	29	47
80	French polishers	131	55	126	150	134	135	93	78
81	Sawyers; wood turners and machinists	34	53	28	67	67	27	79	126
82	Upholsterers, coach trimmers, and bedding makers ..	31	57	53	42	62	32	85	32
83	Paper mill workers	19	105	35	42	16	11	36	59
84	Hand compositors	80	79	129	88	69	75	91	62
85	Machine compositors	33	117	37	79	30	34	161	178
86	Photographers	39	43	104	123	32	14	74	51
87	Printing machine minders and assistants; machine rulers	82	62	107	61	69	112	47	4
88	Bookbinders and pattern card makers	110	169	120	65	112	102	53	40
89	Employers and managers in the building, contracting, and decorating trades; clerks of works	79	21	58	72	72	121	117	122
90	Foremen and gangers (building and contracting) ..	15	11	17	8	27	20	37	94
91	Bricklayers	29	32	20	39	58	46	55	69
92	Plasterers	83	41	60	111	86	95	63	70
93	Slaters and tilers	96	147	5	81	106	122	98	124
94	Masons; stone cutters and dressers	153	66	78	149	162	157	135	108
95	Slate masons and slate workers	167	35	173	152	167	167	167	173
96	Platelayers	51	61	67	51	61	61	105	141
97	Contractors' labourers; navvies	47	40	63	106	66	35	38	48
98	Painters and decorators	105	83	78	106	114	109	106	79
99	Building trade labourers	102	54	45	108	115	105	103	142
100	Rubber workers	43	84	85	30	55	51	1	2
101	Drafters and brush makers	146	177	147	144	165	44	124	67
102	Shipwrights	58	90	118	44	43	62	14	88
103	Shipyards labourers, etc.	150	140	167	161	152	114	122	45
104	Gas stokers	141	81	27	97	118	169	176	177
105	Railway officials, station masters, etc.	10	—	18	8	15	22	62	42
106	Locomotive engine drivers, firemen, cleaners, etc. ..	25	44	30	21	20	38	64	68
107	Railway guards	22	86	22	16	17	40	94	44
108	Railway signalmen	6	9	8	3	3	17	46	71
109	Shunters, pointsmen, and level crossing men	49	84	33	84	48	52	7	85
110	Railway porters and lampmen	91	72	92	101	102	71	88	110
111	Livery stable and motor garage proprietors and managers; haulage contractors	24	56	22	38	18	26	16	76
112	Drivers of horse-drawn vehicles	152	134	137	153	150	150	147	154
113	Drivers of motor vehicles and steam wagons	30	75	56	51	25	48	57	136
114	Tram drivers	35	152	88	46	31	30	17	159
115	Omnibus and tram conductors	76	38	98	85	126	47	89	160
116	Grooms and horse keepers	100	36	45	91	125	103	59	103
117	Bargemen and boatmen	142	139	151	147	145	126	116	119
118	Stevedores	169	109	159	169	168	164	157	158
119	Coal boat loaders and dischargers	132	131	132	151	126	130	154	131
120	Other dock labourers	165	133	149	166	164	158	130	147
121	Messengers, hall porters, lift attendants, etc.	126	176	164	116	113	83	81	7
122	Porters	161	162	167	165	158	144	125	92
123	Proprietors and managers of wholesale or retail dealing businesses	94	128	105	85	89	86	82	64

TABLE E.—MORTALITY RANK OF OCCUPATIONS AT VARIOUS AGES—MALES—1921-23—*continued.*

Occupation Group No.	OCCUPATION.	Ages 20—65.	20—	25—	35—	45—	55—	65—	70 and up- wards.
123A	Proprietors and managers of businesses for the sale of fish, meat, greengrocery, and milk	122	137	131	117	110	132	96	80
123B	Proprietors and managers of businesses for the sale of grocery and provisions	69	105	55	27	77	89	110	102
123c	Proprietors and managers of businesses for the sale of textiles and clothing	63	57	52	69	51	77	72	86
124	Salesmen and shop assistants	74	64	73	95	87	58	22	38
124A	Salesmen and shop assistants in businesses for the sale of fish, meat, greengrocery, and milk	139	100	117	139	137	149	114	139
124B	Salesmen and shop assistants in businesses for the sale of grocery and provisions	56	60	105	121	46	36	5	3
124c	Salesmen and shop assistants in businesses for the sale of textiles and clothing	104	94	95	120	117	81	10	89
125	Commercial travellers	113	111	98		119	120	131	113
126	Canvassers, roundsmen, and van salesmen	36	101	116	79	36	16	12	23
127	Costermongers, hawkers, and street sellers	171	145	172	173	170	154	127	84
128	Bank officials	4	—	1	24	5	10	32	34
129	Insurance officials	3	6	10	2	10	5	9	17
130	Insurance agents and canvassers	97	165	162	115	80	25	39	52
131	Auctioneers appraisers, valuers	95	161	78	59	109	76	100	53
132	Civil service officials and clerks	17	18	26	13	21	18	13	21
133	Local authority officials and clerks	20	31	28	15	26	28	28	15
134	Clergymen (Anglican Church)	2	—	7	10	4	4	26	10
135	Roman Catholic priests; monks	21	—	11	47	23	53	35	61
136	Ministers of other religious bodies	7	—	4	6	7	24	25	49
137	Barristers	121	178*	126	129	104	80	31	36
138	Solicitors	46	30	6	60	94	63	45	6
139	Registered medical practitioners	90	148	60	66	100	87	40	26
140	Dentists	48	19	43	49	123	31	73	27
141	Teachers (not music teachers)	16	146	20	12	8	15	23	19
142	Music teachers	108	175	154	125	59	49	33	46
143	Civil engineers and surveyors	18	59	13	36	29	13	68	16
144	Architects	54	138	14	50	33	111	126	65
145	Authors, editors, journalists	77	22	16	68	132	99	95	29
146	Artists	78	38	73	108	101	67	41	50
147	Proprietors and managers of theatres, entertainments, sports	89	27	100	117	129	50	102	99
148	Actors	148	27	143	157	138	151	170	81
149	Musicians	128	143	124	148	130	125	132	93
150	Domestic servants (indoor)	40	66	58	70	75	21	24	13
151	Gamekeepers	8	12	96	29	1	8	52	128
152	Inn, hotel—keepers, publicans	166	24	158	170	171	156	141	115
153	Barmen	174	156	170	175	173	170	128	14
154	Waiters	147	141	69	142	160	140	107	153
155	Laundry workers	44	48	133	34	44	39	15	18
156	Hairdressers etc.	133	135	143	112	140	133	111	62
157	Chimney sweeps	117	174	41	105	97	123	77	55
158	Clerks (not civil service or local authority); typists	88	72	114	96	98	69	80	39
158A	Bank and insurance clerks	59	17	35	28	107	70	120	31
158B	Railway clerks	51	52	77	54	42	65	168	138
159	Draughtsmen	45	37	82	71	68	40	145	1
160	Warehousemen	80	114	83	100	79	77	113	75
160A	Warehousemen—textiles and clothing	158	173	165	143	154	145	163	170
160B	Warehousemen—cereals, provisions and dry goods	97	119	78	104	85	99	101	41
161	Storekeepers	67	98	94	98	73	43	49	33
162	Packers	109	112	85	133	105	106	34	54
163	Stationary engine and crane drivers	59	108	93	41	44	73	108	127
164	General and undefined labourers	159	144	163	159	156	147	138	150

* One death only, see page xci.

(B 34/3490) POSITION OF EACH OCCUPATION IN A LIST ARRANGED FOR EACH CAUSE IN ORDER OF DEATH FROM CERTAIN SELECTED CAUSES—1921-23. (see page liii).

xxxix

Group Number.	OCCUPATION.	All Causes.	Influenza.	Tuberculosis (all forms).	Respiratory tuberculosis.	Syphilis, etc.	Cancer (all sites).	Cancer of the stomach.*	Diabetes.	Cerebral hemorrhage, etc.	Diseases of the circulatory system.	Heart, Valvular disease of heart.	Other heart disease.	Diseases of the respiratory system.	Bronchitis.	Pneumonia.	Diseases of the digestive system.	Peptic ulcer.	Appendicitis.	Cirrhosis of liver.	Chronic nephritis.	Suicide.	Accident.	Group Number.		
1	Farmers and their relatives	9	39	11	8	14	17	70	133	34	9	13	23	14	12	10	18	90	67	148	90	36	129	92	1	
2	Gardeners and their labourers	12	42	37	40	33	53	51	41	12	17	26	49	22	13	24	10	31	30	99	33	13	85	40	2	
3	Farm bailiffs and foremen	1	29	3	2	22	11	40	10	6	4	11	11	6	5	12	17	8	30	31	22	33	85	40	3	
4	Woodmen and labourers in woods and forests	13	21	39	36	45	20	106	94	7	11	18	13	11	2	7	17	36	112	103	31	1	122	93	4	
5	Agricultural labourers (including shepherds)	11	70	21	23	23	11	57	31	17	10	15	27	16	18	33	23	15	26	42	25	15	92	111	5	
6	Coal mine—subordinate superintending staff	27	82	9	9	31	31	109	25	87	21	20	24	31	28	50	20	66	28	140	106	33	37	173	6	
7	Coal mine—hewers and getters	62	117	32	28	93	34	127	21	78	32	20	56	32	117	130	88	33	60	33	60	56	169	7		
8	Coal mine—persons conveying material to the shaft	127	145	40	44	82	33	89	84	134	106	127	137	108	126	134	98	123	86	61	76	41	95	178	8	
9	Coal mine—persons making and repairing roads	124	161	58	62	85	103	184	54	142	88	95	119	71	132	129	118	101	81	43	78	45	176	9		
10	Coal mine—other workers below ground	130	165	70	68	88	74	160	74	111	112	113	129	86	141	139	143	104	69	65	96	64	62	175	10	
11	Coal mine—workers above ground, not superintending staff	123	163	93	81	100	50	112	64	148	139	151	168	106	139	143	124	74	57	40	83	80	52	154	11	
12	Iron and copper miners—underground workers, not superintending staff	168	175	62	52	9	41	92	47	79	16	7	34	4	80	54	32	61	22	130	27	6	66	168	12	
13	Tin and copper miners—not superintending staff	176	130	177	177	—	152	92	176	176	168	169	63	173	176	173	11	97	85	156	—	169	176	165	13	
13a	Tin and copper mine—underground workers, not superintd. staff	178	10	178	178	—	176	165	174	178	178	178	166	178	175	176	58	132	144	170	—	177	178	166	13a	
14	Stone miners and quarriers	63	102	65	70	72	6	60	51	57	53	52	120	13	95	85	96	41	57	73	—	4	58	172	14	
15	Slate miners and quarriers	64	135	143	145	24	14	150	—	11	100	109	169	9	26	37	6	4	77	—	—	2	4	167	15	
16	Cement workers, lime burners, etc.	14	19	24	29	20	54	70	157	1	2	2	10	2	77	40	134	40	153	—	65	17	60	161	16	
17	Brick and plain tile makers, etc.; furnace, etc., pot makers	53	138	91	93	154	47	122	15	22	67	80	108	67	120	152	39	18	131	—	16	70	36	17	17	
18	Potters' mill workers; slip makers; potters	170	133	173	173	27	45	17	76	116	142	137	164	85	173	176	132	153	150	99	160	158	165	56	18	
19	Pottery dippers, glazers, painters, decorators	156	151	146	—	—	166	162	105	173	171	168	91	171	110	146	63	134	125	—	171	172	32	—	19	
20	Earthenware, china, etc., kiln and oven men	172	155	168	167	30	169	126	23	146	139	159	32	172	175	140	160	113	157	154	124	167	119	80	20	
21	Brick, tile, etc., kiln and oven men	37	80	31	29	69	30	19	22	30	64	83	125	38	106	125	38	2	10	48	—	118	131	98	21	
22	Other persons engaged in the manuf. of bricks and pottery	135	148	111	103	101	108	153	136	124	133	132	131	129	152	165	116	139	167	141	53	102	117	151	22	
23	Skilled glasshouse workers	136	127	134	136	58	147	55	177	139	115	100	133	62	147	166	95	22	64	69	108	87	167	34	23	
23a	Glass blowers and finishers, not machine hands	145	30	135	140	112	165	19	178	75	107	69	104	50	156	171	80	88	110	73	148	137	156	20	23a	
24	Other skilled glass workers	157	168	155	155	127	152	146	171	166	89	50	61	57	162	162	163	3	9	38	61	157	154	76	24	
25	Chemical workers	37	122	36	42	89	137	114	49	15	22	32	39	41	92	122	85	66	15	143	94	10	19	144	25	
26	Makers of paint, oil, soap, grease, etc.	30	125	59	56	39	80	108	24	120	60	79	77	83	85	116	36	35	14	114	20	46	20	117	26	
27	Persons engaged in smelting, rolling, converting of iron and steel	92	147	59	62	44	119	101	44	68	33	28	44	29	140	119	151	68	72	52	97	28	82	142	27	
27a	Puddlers	138	53	81	64	28	170	98	17	147	20	14	37	11	166	167	172	76	108	—	—	21	124	78	27a	
28	Metal moulders	118	150	97	101	56	135	111	85	128	72	73	66	88	151	140	162	92	57	115	128	98	71	69	28	
29	Iron foundry furnacemen and labourers	115	166	78	89	56	89	106	83	51	89	67	95	55	161	144	174	11	35	34	26	135	57	88	29	
30	Brass foundry furnacemen and labourers	164	177	167	144	144	93	33	71	168	148	138	74	156	167	151	178	152	156	165	150	91	99	95	30	
31	Smiths and skilled forge workers	66	95	57	53	113	114	119	125	65	51	47	75	28	103	114	107	59	83	43	84	67	64	83	31	
32	Machine tool workers and metal spinners	71	75	101	110	91	96	109	57	125	62	59	81	58	84	97	77	52	70	94	39	75	68	37	32	
33	Fitters, tool setters, millwrights and similar occupations	57	53	75	72	136	67	62	78	119	59	57	76	49	47	52	50	83	81	69	102	79	59	116	33	
34	Boiler makers and platers and their labourers	72	22	69	74	125	66	62	90	115	69	64	102	45	94	90	108	115	120	108	70	69	99	110	34	
35	Brass finishers and turners	143	158	161	163	150	159	173	38	112	35	37	65	20	145	142	152	117	154	111	145	104	24	47	35	35
36	Coppersmiths	107	159	152	153	61	42	12	12	174	5	9	70	1	56	9	83	126	99	124	126	174	—	72	36	36
37	Cutlers	140	31	165	168	49	117	32	46	81	160	142	161	107	142	80	153	1	—	—	—	50	118	159	37	
38	File cutters	173	174	171	171	—	124	—	165	175	149	145	174	36	164	172	106	103	118	175	155	178	93	29	38	
39	Gas fitters and pipe fitters	75	121	74	75	54	146	135	45	141	6	6	9	15	95	77	107	79	151	99	102	57	122	112	39	39
40	Metal grinders	175	160	175	175	134	162	161	152	159	157	157	94	166	172	170	165	108	30	132	115	85	135	96	40	40a
40a	Grinders in the cutlery trade	177	159	176	176	159	177	168	142	171	177	176	173	177	177	177	177	99	76	132	146	132	126	105	40a	
41	Metal glazers, polishers, buffers, and moppers	160	172	162	165	123	150	177	38	143	132	149	72	165	158	149	171	109	142	150	44	124	115	9	41	
42	Plumbers	59	61	51	54	60	39	23	64	153	37	25	52	17	36	43	62	94	123	54	87	69	125	42	42	
43	Riveters and their labourers	103	100	116	116	161	63	87	38	131	69	63	69	73	133	136	146	39	35	84	41	46	18	136	43	43
44	Tinsmiths and sheet metal workers	83	123	117	121	98	96	112	124	75	63	81	57	117	109	66	141	24	109	58	18	90	51	80	44	44
45	Gold, silver, and white metal smiths	70	8	102	104	139	133	92	59	59	71	72	73	80	99	84	93	32	39	24	30	102	79	79	45	45
46	Electrical engineers, fitters and wiremen	99	102	105	108	154	84	62	78	75	108	91	92	98	67	65	78	135	146	79	138	49	110	132	46	46
47	Makers of watches, clocks, scientific and electrical instruments	26	109	89	94	35	35	57	129	24	44	55	18	125	8	7	7	27	97	30	20	138	155	6	47	47
48	Skilled line and tanyard workers, carriers, and leather dressers	114	106	138	139	63	127	124	71	32	81	76	103	63	114	88	140	150	160	136	153	60	156	87	48	48

* See Appendix D.

TABLE F.—MORTALITY RANK OF MALES AGED 20-65 YEARS FROM CERTAIN SELECTED CAUSES—1921-23—continued.

Group Number.	Occupation.	All Causes.	Influenza.	Tuberculosis (all forms).	Respiratory tuberculosis.	Syphilis, etc.	Cancer (all sites).	Stomach.*	Diabetes.	Cerebral hemorrhage, etc.	Diseases of the circulatory system.	Disease of the heart.	Valvular disease of heart.	Other heart disease.	Diseases of the respiratory system.	Bronchitis.	Pneumonia.	Diseases of the digestive system.	Peptic ulcer.	Appendicitis.	Cirrhosis of liver.	Chronic nephritis.	Suicide.	Accident.	Group Number.
49	Skilled leather goods makers	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	49
50	Wool sorters	129	128	100	99	171	19	6	275	35	155	141	111	151	127	98	159	105	175	156	61	120	177	67	50
51	Cotton blow room operatives—skilled	163	34	30	39	29	109	169	173	169	166	163	171	148	171	169	175	170	35	146	167	176	171	12	51
52	Rag grinders, wool willowers, etc.	125	88	96	107	130	132	178	25	169	143	143	61	162	71	135	25	138	170	81	81	170	145	33	52
53	Cotton card and frame (not spinning frame) tenters	168	171	110	98	141	155	36	60	177	175	178	178	169	165	137	173	147	169	119	—	168	169	134	53
54	Wool and worsted card comb or frame (not spinning frame) tenters	151	63	151	144	53	99	99	12	150	138	120	143	78	148	160	147	169	159	106	44	161	141	141	54
55	Cotton strippers and grinders and card room jobbers	154	176	45	50	108	46	6	120	138	164	171	177	133	174	177	155	54	136	—	—	154	50	121	55
56	Cotton spinners and piecers	137	109	104	102	42	173	166	74	152	152	154	163	139	129	131	121	145	87	126	97	146	138	34	56
57	Wool and worsted spinners and piecers	111	27	67	65	—	144	163	141	149	104	131	121	136	49	36	97	137	43	173	169	175	45	91	57
58	Cotton—doublers, winders, warpers, etc.	134	144	98	59	31	138	145	29	136	158	162	158	158	146	148	148	98	72	—	121	107	151	38	58
59	Wool and worsted—doublers, winders, warpers, beamers, etc.	73	16	26	15	142	93	8	164	154	170	181	153	159	48	63	21	100	11	176	97	145	158	7	59
60	Cotton weavers	101	114	41	35	39	77	129	120	163	130	135	151	119	107	138	53	118	87	121	22	119	146	8	60
61	Woollen and worsted weavers	106	3	125	115	13	83	97	170	69	161	155	170	109	121	70	8	154	124	88	111	150	6	85	61
62	Weavers of other textiles	42	7	80	66	15	27	83	52	157	114	134	86	154	37	42	66	25	8	65	—	142	29	13	62
63	Hosiery frame tenters and machine knitters	54	38	63	37	78	62	170	95	102	52	11	20	18	35	57	21	118	5	—	168	133	172	55	63
64	Dye mixers and dyers	144	167	119	119	102	110	132	154	106	152	156	157	149	144	155	142	158	148	106	147	135	96	122	64
65	Scourers (woollen, worsted and hosiery), calenderers and finishers	86	81	83	85	16	93	157	78	118	121	129	142	104	105	127	101	92	12	—	41	144	41	24	65
66	Cutters of textile goods and clothing (not machine cutters)	120	2	160	158	137	57	9	142	151	94	122	139	91	121	98	133	96	148	—	—	144	27	28	66
67	Tailors; tailors' pressers and machinists	86	41	136	135	131	57	54	99	98	111	117	84	134	69	109	41	89	117	83	51	88	127	18	67
68	Hat formers, plankers, stiffeners	184	94	157	152	11	172	167	123	161	172	173	147	174	138	113	138	157	134	—	166	149	7	66	68
69	Boot and shoe makers and repairers (not factory workers)	185	70	137	128	111	38	66	85	85	80	93	116	73	89	112	74	82	114	26	86	65	130	27	69
70	Boot and shoe makers and cutters	112	51	154	156	89	91	115	61	156	136	144	134	147	54	96	27	52	78	65	119	105	15	21	70
71	Skilled boot and shoe operatives, not clickers or cutters	116	45	156	157	131	69	124	107	121	92	118	122	102	102	103	94	110	161	121	76	82	132	4	71
72	Grain millers	23	83	29	33	35	10	48	128	36	14	23	5	118	76	71	88	25	4	93	100	5	152	108	72
73	Bakers and pastry cooks	31	91	87	90	67	79	84	101	26	39	42	55	39	72	62	88	16	56	25	70	20	105	42	73
74	Brewers of ale, stout, and porter	149	23	91	24	20	178	54	101	172	134	112	126	89	78	120	5	176	54	36	48	36	127	45	78
75	Celarmen	162	170	139	143	161	175	68	—	60	169	170	137	170	137	145	81	172	161	50	114	175	162	147	75
76	Tobacco factory operatives	119	24	159	160	110	134	128	167	10	158	135	160	94	42	61	60	164	166	—	—	164	82	3	76
77	Foremen and overlookers (wood working)	5	34	8	10	18	40	171	54	37	3	3	12	3	11	22	14	5	3	90	—	131	12	74	77
78	Cabinet makers	93	65	118	117	91	128	144	115	103	98	88	51	127	86	121	51	45	107	3	48	36	127	128	78
79	Carpenters, coach builders, pattern makers and similar occupations	28	60	61	57	78	76	76	69	62	33	39	53	30	31	49	34	38	55	86	76	45	76	45	79
80	French polishers	131	15	150	150	141	140	133	78	123	113	98	59	124	134	132	122	124	169	46	79	127	147	62	80
81	Sawyers; wood turners and machinists	34	78	71	81	83	112	134	57	29	43	49	60	53	43	64	28	46	41	115	110	14	97	99	81
82	Upholsterers, coach trimmers and bedding makers	31	37	122	123	43	113	102	9	39	31	45	79	23	41	72	46	14	41	63	24	38	56	41	82
83	Paper mill workers	19	20	23	24	38	94	102	148	26	24	29	110	5	5	15	53	20	7	130	33	86	80	105	83
84	Hand compositors	80	114	126	125	104	70	38	139	106	93	95	48	135	62	104	43	93	54	138	90	122	16	25	84
85	Machine compositors	33	4	123	130	47	8	8	193	3	123	125	46	155	88	68	112	65	165	—	156	69	23	77	85
86	Photographers	39	86	88	77	97	9	42	156	70	101	107	38	35	19	27	24	47	6	—	—	68	99	58	86
87	Printing machine minders and assistants; machine rulers	82	73	124	121	116	72	174	41	94	103	95	96	100	79	107	72	49	127	77	44	71	49	52	87
88	Bookbinders and pattern card makers	110	97	114	118	150	164	148	125	115	101	100	149	22	51	98	79	139	168	—	61	17	139	143	88
89	Employers, managers in the building, etc.; trades; clerks of works	79	50	26	27	50	107	107	125	155	125	106	80	120	128	115	42	128	115	103	130	140	114	153	90
90	Foremen and gangers (building and contracting)	115	42	1	1	45	21	72	110	47	28	34	90	37	33	39	48	37	93	23	102	73	38	170	91
91	Bricklayers	29	33	38	46	105	86	75	31	41	45	51	88	35	82	75	91	43	64	54	101	37	42	115	91
92	Plasterers	83	56	55	60	114	142	174	41	72	75	87	66	111	119	102	130	47	99	99	36	120	60	138	92
93	Slaters and tilers	96	14	94	86	68	158	152	105	62	91	116	172	8	108	155	139	29	45	—	66	23	47	155	93
94	Masons, stone cutters and dressers	153	130	164	161	89	118	188	43	135	127	133	131	130	149	152	110	112	134	39	115	115	102	128	94
95	Slate masons and slate workers	167	173	174	174	37	106	182	—	16	176	177	175	176	38	14	52	9	162	162	148	166	—	11	95
96	Platelayers	51	129	23	22	83	88	81	95	42	56	68	109	42	74	73	86	30	50	—	64	80	67	171	96
97	Contractors' labourers; navvies	47	117	49	55	47	71	91	31	44	40	48	82	26	103	94	113	21	50	32	40	38	40	153	97
98	Painters and decorators	105	90	90	96	120	100	88	78	162	95	86	113	97	87	106	84	51	105	51	64	162	75	124	98
99	Building trade labourers	102	108	92	100	107	122	135	17	71	38	94	98	97	131	133	131	94	139	52	68	5	57	150	99
100	Rubber workers	43	57	99	97	78	120	135	—	101	38	44	31	77	83	55	120	83	21	—	83	83	43	43	100
101	Dratters and brush makers	146	52	170	170	133	68	131	70	14	105	99	80	116	153	164	144	86	125	127	118	152	75	2	101
102	Shipwrights	58	6	95	92	163	100	141	30	96	84	90	135	43	83	82	68	10	17	111	—	24	31	135	102
103	Shipyard labourers, etc.	150	169	144	146	170	139	172	21	100	119	119	154	47	43	165	164	87	78	113	65	92	107	160	103
104	Gas stokers	141	164	105	105	102	171	90	131	56	124	114	128	21	150	158	154	127	178	139	112	124	22	145	104
105	Railway officials, station masters, etc.	10	98	13	14	11	32	30	58	28	25	17	28	21	26	45	40	5	68	12	37	27	38	130	105

107	Railway guards ..	22	119	14	18	52	42	42	85	61	15	19	48	30	31	55	71	60	119	41	52	36	157	107
108	Railway signmen ..	22	119	14	18	52	42	42	85	61	15	19	48	30	31	55	71	60	119	41	52	36	157	107
109	Shawls, shawls, and level-crossing men ..	49	141	20	22	124	48	50	142	99	8	10	7	44	3	18	12	27	21	50	33	13	47	108
110	Railway, porters and lampmen ..	91	133	112	113	138	164	138	125	92	36	46	45	68	100	123	60	62	145	43	52	95	129	110
111	Livery stable, motor garage proprs., etc.; haulage contractors ..	24	36	18	20	63	25	24	47	24	41	41	28	70	46	83	31	65	105	148	135	61	147	111
112	Drivers of horse-drawn vehicles ..	152	140	129	129	152	157	151	99	137	144	147	145	144	154	156	156	136	147	69	125	79	156	112
113	Drivers of motor vehicles and steam wagons ..	30	46	43	47	128	82	77	77	19	48	58	70	65	64	69	57	81	70	90	73	26	81	103
114	Tram drivers ..	35	152	68	76	153	82	26	114	2	83	54	34	99	65	65	45	6	39	28	59	31	10	114
115	Omnibuses and tram conductors ..	76	55	150	134	142	148	116	113	4	47	43	40	64	111	117	105	131	91	166	—	130	73	14
116	Grooms and horse keepers ..	100	61	77	79	147	147	105	72	10	87	103	138	59	122	108	136	80	67	166	88	142	126	116
117	Stewards ..	142	162	109	112	174	136	147	37	145	141	148	150	139	128	124	123	27	103	35	73	113	20	174
118	Boatmen ..	169	91	166	166	164	164	118	34	42	135	140	159	105	170	157	176	166	176	166	72	151	173	149
119	Coal boat loaders and dischargers ..	132	157	121	122	165	149	15	101	80	150	139	122	142	160	150	168	13	33	—	127	109	24	146
120	Other boat labourers ..	165	124	158	159	166	166	164	25	127	145	146	146	143	168	163	170	149	152	41	131	108	109	158
121	Messengers, hall porters, lift attendants, etc. ..	126	104	145	148	149	123	77	17	55	137	150	167	113	118	86	137	129	154	27	102	46	78	113
122	Porters ..	161	142	153	154	167	168	155	68	108	162	165	152	163	157	159	164	162	163	121	90	82	119	123
123	Proprietors and managers of wholesale or retail dealing businesses ..	194	111	52	53	117	60	65	147	105	122	121	77	141	75	53	101	144	61	151	158	128	160	89
123a	Props., etc., of businesses for sale of fish, meat, greengrocery, milk ..	122	130	64	67	135	102	92	161	132	156	158	130	161	115	87	125	155	45	153	160	90	123a	123
123b	Props., etc., of businesses for the sale of grocery and provisions ..	69	107	54	26	87	48	61	158	117	129	126	101	128	52	31	82	156	128	118	139	139	124	31
123c	Props., etc., of businesses for the sale of textiles and clothing ..	63	84	51	51	98	36	47	67	87	96	70	41	130	50	38	67	133	24	124	154	112	149	74
124	Salesmen and shop assistants ..	74	87	107	106	119	61	72	145	91	99	102	107	100	66	92	59	64	50	57	129	76	86	64
124a	Salesmen, etc., in businesses for sale of fish, meat, greengrocery, milk ..	139	126	113	117	148	129	143	163	158	163	164	155	160	136	141	129	113	84	88	147	121	84	124a
124b	Salesmen, etc., in businesses for the sale of grocery and provisions ..	56	48	127	65	148	49	162	113	58	59	58	59	58	52	43	60	64	56	122	133	134	55	103
124c	Salesmen, etc., in businesses for the sale of textiles and clothing ..	104	57	132	126	93	141	123	132	62	109	115	115	114	114	68	110	35	42	61	79	107	52	98
125	Commercial travellers ..	113	73	82	88	157	131	57	153	109	128	127	114	131	63	45	92	159	72	161	159	111	153	120
126	Canvassers, roundsmen and van salesmen ..	36	93	76	84	117	64	67	8	28	57	89	100	81	70	81	65	7	49	20	94	63	88	102
127	Cosmetologists, hairdressers and street sellers ..	171	116	169	169	175	126	142	87	95	167	166	156	164	169	168	169	139	120	35	143	148	136	152
128	Bank officials ..	4	49	4	5	10	3	13	14	53	12	12	3	79	14	5	29	148	128	174	141	70	13	59
129	Insurance officials ..	3	77	7	7	26	4	81	155	37	7	4	1	24	7	8	13	77	15	151	56	33	29	49
130	Insurance agents and canvassers ..	97	143	148	147	76	37	92	95	67	64	75	105	60	57	79	26	91	111	133	54	81	144	73
131	Auctioneers, appraisers, valuers ..	95	93	35	38	146	99	38	166	74	116	85	47	126	21	19	76	151	64	169	161	106	166	140
132	Civil service officials and clerks ..	17	27	42	48	62	44	28	107	20	29	27	22	31	15	29	11	63	63	73	84	42	47	43
133	Local authority officials and clerks ..	20	75	46	43	50	23	35	117	82	19	16	21	62	17	26	19	102	138	127	108	92	77	57
134	Clergymen (Anglican Church) ..	2	13	6	6	8	2	29	61	23	13	4	4	37	6	3	105	74	93	142	56	42	93	63
135	Roman Catholic priests; monks ..	21	91	17	18	—	16	10	149	129	74	82	7	47	29	—	103	19	28	94	—	159	—	118
136	Ministers of other religious bodies ..	7	47	5	4	7	1	16	133	13	110	91	26	146	4	4	4	121	30	168	59	66	5	15
137	Barriers ..	121	1	2	2	70	130	—	—	91	173	172	87	175	24	2	87	178	178	73	156	133	94	137
138	Solicitors ..	46	22	15	17	108	76	24	87	97	77	34	16	90	55	11	117	160	25	158	170	92	163	32
139	Registered medical practitioners ..	90	141	10	11	96	29	14	151	85	53	33	6	123	90	16	149	168	87	145	150	134	170	164
140	Dentists ..	48	17	33	41	76	13	36	169	5	46	22	58	12	39	16	104	172	43	73	173	140	168	119
141	Teachers (not music teachers) ..	16	113	22	23	25	22	31	117	54	27	24	15	72	10	13	16	73	45	97	66	39	73	68
142	Music teachers ..	108	99	53	69	158	74	5	149	160	118	110	148	54	143	51	158	57	20	86	142	56	9	100
143	Civil engineers and surveyors ..	18	68	16	16	106	28	11	146	49	23	31	14	84	16	6	33	85	19	103	132	58	103	143
144	Architects ..	54	18	44	32	34	110	18	116	103	75	71	50	110	53	23	98	167	141	172	136	52	72	22
145	Authors, editors, journalists ..	77	69	47	34	143	85	21	49	133	146	111	112	112	32	48	165	130	99	172	113	112	61	145
146	Artists ..	78	156	85	95	169	121	84	52	9	66	56	33	103	97	111	36	17	151	31	116	84	17	146
147	Proprietors and managers of theatres, entertainments, sports ..	89	5	83	80	168	26	120	159	46	73	76	30	128	73	30	127	161	132	159	165	109	159	136
148	Actors ..	148	95	140	141	177	145	139	133	122	125	108	97	121	34	21	69	174	162	159	174	160	106	107
149	Musicians ..	128	11	131	133	172	163	129	137	45	147	152	141	150	123	118	135	142	93	136	136	99	34	109
150	Domestic servants (indoor) ..	40	26	56	61	129	90	41	109	32	30	30	25	56	23	34	56	120	102	143	47	117	136	69
151	Gamekeepers ..	8	25	50	45	21	65	52	130	8	1	1	2	7	1	20	1	43	103	97	27	8	150	114
152	Inn, hotel—keepers, publicans ..	166	154	133	132	121	143	86	172	165	167	144	168	135	74	157	177	163	167	178	171	174	131	182
153	Barnen ..	174	149	172	172	173	174	176	16	167	174	174	176	176	154	166	166	175	174	54	176	173	163	153
154	Walters ..	147	63	147	149	176	175	160	40	55	53	93	27	130	88	150	143	45	77	162	72	11	81	154
155	Laundry workers ..	44	40	72	78	73	51	44	95	50	42	66	38	114	91	58	118	34	35	96	133	100	143	65
156	Hairdressers, etc. ..	133	8	141	137	156	92	69	140	164	130	124	83	145	116	101	115	147	87	115	150	165	139	19
157	Chimney sweeps ..	117	12	142	147	19	167	148	—	20	154	160	162	151	113	126	109	60	22	35	140	97	111	104
158	Clerks (not civil service or local authority); typists ..	88	104	121	120	139	78	45	120	89	79	73	68	86	54	47	69	111	98	122	92	108	51	158
158a	Bank and insurance clerks ..	59	133	66	72	144	116	46	61	47	50	65	54	96	61	46	75	122	118	133	90	12	134	39
158b	Railway clerks ..	51	79	108	109	78	24	7	111	126	49	37	43	40	58	44	73	130	99	147	89	59	40	16
159	Draughtsmen ..	45	136	79	75	75	15	22	56	52	82	62	99	45	25	35	71	78	72	61	122	32	91	26
160	Warehousemen ..	80	120	115	114	74	80	80	91	89	97	104	124	75	101	95	114	107	140	92	87	83	54	30
160a	Warehousemen—textiles and clothing ..	158	152	163	162	122	161	158	168	144	85	105	117	95										

TABLE G—continued.

	Age.	Social Class.					Never occu- pied.		Age.	Social Class.					Never occu- pied.	
		I.	II.	III.	IV.	V.				I.	II.	III.	IV.	V.		
Diseases of respiratory system	16- 20- 25- 35- 45- 55- 65- 70 and over	58 50 63 73 71 55 51 57	79 74 82 82 77 71 69 82	96 97 90 86 90 96 101 102	104 112 116 116 109 109 107 108	121 147 151 163 160 152 140 133	308 264 188 112 76 34 14 7		Hernia	45- 55- 65- 70 and over	29 55 75 48	69 91 96 101	102 100 104 94	110 109 79 119	140 118 121 106	100 16 5 9
								Intestinal obstruction	16- 20- 25- 35- 45- 55- 65- 70 and over	— 179 133 41 171 107 104 128	112 83 81 114 103 114 125 117	88 96 95 83 85 86 96 94	120 104 114 103 105 100 83 100	88 113 105 159 110 100 92 10	128 200 348 186 92 64 83 10	
Bronchitis	20- 25- 35- 45- 55- 65- 70 and over	— 24 25 30 25 27 39	71 64 55 55 54 54 75	90 83 80 89 99 105 106	135 139 130 118 118 112 114	123 169 205 195 164 151 136	484 271 140 52 25 9 6		Cirrhosis of liver ...	35- 45- 55- 65- 70 and over	207 167 148 110 124	207 193 177 164 137	50 67 71 83 82	83 80 61 67 95	95 80 87 81 95	155 160 77 31 12
Pneumonia	16- 20- 25- 35- 45- 55- 65- 70 and over	38 57 65 88 90 85 84 108	76 71 83 86 84 85 88 101	95 96 93 88 88 90 93 93	105 111 113 111 106 102 100 89	114 146 153 154 150 148 133 131	262 243 150 101 76 41 20 10		Other diseases of diges- tive system ...	16- 20- 25- 35- 45- 55- 65- 70 and over	67 191 81 129 138 139 112 109	64 78 106 116 114 115 117 109	92 91 87 89 90 85 103 96	108 107 94 94 90 100 88 97	133 140 158 112 110 98 87 97	308 289 346 231 148 59 22 8
Chronic interstitial pneumonia	45- 55- 65- 70 and over	86 57 44 161	62 74 89 76	133 126 126 129	90 102 82 116	105 71 89 34	348 43 46 8		Acute nephritis ...	16- 20- 25- 35- 45- 55- 65- 70 and over	— 56 95 18 57 92 75 157	39 68 82 109 119 109 129 113	117 108 100 100 104 106 80 81	106 120 95 82 81 85 100 92	94 84 136 141 96 91 106 118	272 40 82 159 19 46 39 4
Other diseases of res- piratory system ...	20- 25- 35- 45- 55- 65- 70 and over	44 82 70 81 76 93 101	94 102 100 100 93 97 107	88 86 90 90 100 103 94	106 118 120 100 98 103 97	150 127 150 124 120 95 106	209 353 110 114 46 21 11		Chronic nephritis ...	16- 20- 25- 35- 45- 55- 65- 70 and over	87 27 31 106 104 106 133 113	60 87 93 100 91 115 120 120	93 96 100 94 87 99 94 81	107 113 110 106 83 85 100 92	123 121 100 124 109 98 97 99	467 269 169 182 104 69 24 12
Diseases of digestive system	16- 20- 25- 35- 45- 55- 65- 70 and over	112 125 86 120 132 139 128 110	94 95 109 118 129 128 123 113	118 95 86 90 84 91 96 94	100 105 100 103 95 84 90 96	118 110 114 125 106 95 90 96	245 170 198 142 112 65 35 11		Diseases of the pro- state	45- 55- 65- 70 and over	150 110 133 145	113 124 131 130	106 105 99 89	106 76 81 83	69 95 74 80	131 57 33 11
Peptic ulcer	16- 20- 25- 35- 45- 55- 65- 70 and over	— 78 42 66 83 134 156 179	100 49 93 76 105 106 111 118	94 89 91 100 89 99 99 90	106 132 113 104 102 88 93 94	125 130 81 140 124 102 86 75	175 205 81 96 62 83 59 25		Other diseases of genito-urinary sys- tem	35- 45- 55- 65- 70 and over	104 94 97 106 119	93 93 99 93 89	82 86 92 93 91	98 116 95 99 99	173 131 127 110 99	267 93 56 40 12
Ulcer of stomach ...	25- 35- 45- 55- 65- 70 and over	17 45 71 122 133 148	80 71 100 100 95 105	93 105 93 100 100 100	132 107 107 94 105 81	132 134 143 106 105 75	66 106 52 55 25 24		Old age	55- 65- 70 and over	27 36 54	55 56 89	91 109 99	82 104 114	200 150 122	33 28 7
								Suicide	16- 20- 25- 35- 45- 55- 65- 70 and over	— 63 140 140 106 106 84 77	113 149 116 135 135 113 98 82	103 93 89 90 85 98 105 107	90 90 102 80 82 96 96 102	103 90 105 100 94 96 102 130	190 206 221 215 162 71 14 15	
Ulcer of duodenum ...	25- 35- 45- 55- 65- 70 and over	84 105 113 161 197 261	116 85 123 119 145 148	92 91 89 96 96 74	88 100 100 81 84 70	136 153 96 93 52 67	108 78 80 137 121 30									
Appendicitis	16- 20- 25- 35- 45- 55- 65- 70 and over	148 95 111 173 202 233 354 169	83 135 138 143 149 142 100 131	112 103 92 96 81 83 85 92	84 75 89 78 88 83 100 62	105 92 84 61 70 58 85 54	210 85 116 49 95 60 41 19		Accident	16- 20- 25- 35- 45- 55- 65- 70 and over	114 136 82 95 74 49 76 75	56 61 67 72 92 71 67 84	86 94 100 95 126 137 94 101	131 125 127 128 126 125 130 108	106 103 109 126 126 125 127 128	128 117 212 267 264 86 34 14

TABLE H.—MORTALITY OF LEGITIMATE INFANTS CLASSIFIED BY FATHER'S OCCUPATION, 1921.

NOTE.—Of the two lines of figures against each occupation the first refers to the number of deaths registered; the second—printed in italics—to the rate of infant mortality per 1,000 births. The numbers after the titles of the several diseases refer to the Detailed International List of Causes of Death as adapted for use in England and Wales.

Occupation Code Number.	Occupation.	NUMBER OF BIRTHS.			DEATHS AND TOTAL INFANT MORTALITY.			AGES AT DEATH (Both Sexes).				CAUSES OF DEATH (Both Sexes).												Occupation Code Number.			
				Total.			Both Sexes.	Under 4 weeks.	4 weeks-3 months.	3-6 months.	6-12 months.	Common Infectious Diseases (6-10, 25-2).	Tuberculous Diseases (31-37).	Diarrhoea and Enteritis (113).	Developmental and Wasting Diseases (159, 160, 161, 1, 162, 2).	Other Causes.	Syphilis (38).	Rickets (56).	Convulsions (80).	Bronchitis (99).	Pneumonia (100).	Congenital Malformations (159).	Congenital Debility and Sclerosis (160-1).		Premature Birth (161-1).	Injury at Birth (161-2).	Suffocation in bed or not stated how (180 pt.).
		Males.	Females.		Males.	Females.																					
—	Total Legitimate Infants ..	415,241	394,955	810,196	36,978	27,157	64,135	27,464	11,354	10,708	14,609	2,915	1,208	10,608	25,788	23,616	868	175	3,984	4,227	7,426	3,207	5,514	15,225	1,087	434	—
—					89	69	79	33.9	14.0	13.2	18.0	3.6	1.5	13.1	31.8	29.2	1.1	0.2	4.9	5.2	9.2	4.0	6.8	18.8	1.3	0.5	—
—	Social Class I (Upper and Middle) ..	6,385	6,019	12,404	286	190	476	290	61	53	72	10	7	52	251	156	3	1	33	9	32	48	29	147	22	3	—
—					45	32	38	23.4	4.9	4.3	5.8	0.8	0.6	4.2	20.2	12.6	0.2	0.1	2.7	0.7	2.6	3.9	2.3	11.9	2.3	0.2	—
—	Social Class II (Intermediate) ..	61,625	58,681	120,306	3,866	2,799	6,665	3,400	1,142	971	1,152	246	122	928	3,091	2,278	60	16	375	335	584	460	545	1,836	188	38	—
—					63	48	55	28.3	9.5	8.1	9.6	1.4	0.8	7.7	25.7	18.9	0.5	0.1	2.8	2.7	3.8	4.9	3.8	16.3	1.6	0.3	—
—	Social Class III (Skilled Workers) ..	187,716	177,621	365,337	16,350	11,727	28,077	28,302	4,947	4,530	6,298	1,256	508	4,512	11,419	10,382	367	71	1,809	1,869	3,262	1,446	2,392	6,767	475	178	—
—					87	66	77	33.7	13.5	12.4	17.2	3.4	1.4	12.4	31.3	28.4	1.0	0.2	5.0	5.0	8.9	4.0	6.1	18.5	1.3	0.5	—
—	Social Class IV (Intermediate) ..	94,491	89,867	184,358	9,401	7,082	16,483	6,762	2,920	2,870	3,931	790	347	2,735	6,387	6,224	237	46	1,056	1,193	1,955	744	1,443	3,780	256	107	—
—					99	79	89	36.7	15.8	14.8	21.3	4.3	1.9	14.8	34.6	30.8	1.3	0.2	5.7	6.5	10.6	5.7	8.5	20.5	1.4	0.6	—
—	Social Class V (Unskilled Workers) ..	62,494	60,446	122,940	6,798	5,137	11,935	4,536	2,193	2,182	3,024	592	203	2,280	4,452	4,408	189	40	685	797	1,529	490	1,047	2,593	141	106	—
—					109	85	97	36.9	17.8	17.7	24.6	4.8	1.7	18.5	36.2	35.9	1.5	0.3	5.6	6.5	12.4	4.0	8.5	21.1	1.1	0.9	—
000	Fishermen ..	1,430	1,363	2,793	164	112	276	104	60	50	62	8	12	46	103	107	8	2	21	17	31	13	20	60	6	1	000
011, 012	Farmers and their Relatives ..	8,814	8,453	17,267	521	362	883	512	215	179	222	29	43	165	369	383	29	0.7	7.5	6.1	11.1	4.7	7.2	21.2	2.1	0.4	011, 012
013	Gardeners ..	3,994	3,817	7,811	234	183	417	225	87	63	73	15	0.7	72	455	319	1	2	68	47	84	80	76	265	31	2	013
020-4	Agricultural Labourers, etc. ..	14,818	13,842	28,660	1,130	807	1,937	979	353	270	385	81	39	50	210	136	5	1	27	16	39	25	48	123	9	3	020-4
042	Coal Mine—Hewers and Getters ..	32,311	30,696	63,007	3,754	2,735	6,489	2,583	1,153	1,125	1,628	298	97	1,075	2,425	2,594	70	22	520	551	810	257	608	1,399	86	28	042
043-7	Coal Mine—Other Underground Workers ..	12,916	12,356	25,272	1,581	1,191	2,772	1,100	486	528	688	139	42	448	1,034	1,109	28	8	229	253	343	111	254	602	33	11	043-7
049	Coal Mine—Above Ground Workers ..	3,637	3,420	7,057	122	96	218	143	19	20	26	5	1.7	17.7	40.9	43.9	1.1	0.3	9.1	10.0	13.6	4.4	10.1	23.8	1.3	0.4	049
054	Metallicious Mine—Underground Workers ..	887	919	1,806	105	74	179	75	25	28	51	15	3	11	262	291	4	5	67	62	85	21	65	155	9	3	054
072	Stone Quarriers ..	924	936	1,860	88	72	160	75	17	33	35	5	8	15	35.4	42.6	2.2	—	7.2	6.1	15.5	3.9	7.8	21.6	1.7	1.1	072
109, 110	Brick, Tile, and Pottery Kiln and Oven Men ..	522	467	989	66	42	108	36	27	24	21	1	3	36	29	39	1	—	9.1	10.1	8.1	4.0	8.1	17.2	1.1	1	109, 110
119	Unskilled Brick, Tile, and Pottery Workers ..	881	857	1,738	112	90	199	36.4	27.3	24.3	31	52	3	41	68	71	5	1	10	15	15	6	14	48	2	3	119
122-5	Skilled Glass House Workers ..	719	661	1,380	68	48	116	49	18	17	32	4	—	13	44	55	5	0.6	5.8	8.6	8.6	3.5	8.7	27.6	1.2	1.7	122-5
149	Unskilled Chemical Workers ..	761	728	1,489	78	64	142	52	27	22	41	13	4	16	47	62	4	—	5.8	7.2	11.6	6.5	5.1	15.2	2.9	—	149
159	Unskilled Workers in Grease, Oil, Paints, Soap, etc. ..	691	634	1,325	73	63	136	57	14	28	37	2	1	33	48	52	3	1	11	9	19	5	12	27	1	1	159
170-8	Skilled Metal Furnacemen, Puddlers, Converters, and Rollers ..	2,500	2,422	4,922	226	177	403	154	69	71	109	26	12	68	141	156	4	2	29	32	47	16	28	85	8	5	170-8
180	Metal Moulders ..	3,465	3,453	6,918	332	238	570	244	140	144	197	23	8	97	228	214	8	0.4	5.9	6.5	9.5	3.3	5.2	124	10	4	180
182-3	Iron Foundry Furnacemen and Labourers ..	1,733	1,648	3,381	223	201	424	152	75	83	114	20	11	75	144	174	10	—	6.8	5.5	10.1	5.1	7.5	36	4	4	182-3
190	Smiths ..	4,659	4,464	9,123	430	312	742	312	146	117	167	34	15	116	303	274	13	5	7.7	12.7	14.2	5.9	61	188	1	4	190
200	Machine Tool Workers ..	5,197	4,889	10,086	406	340	746	328	126	120	172	37	14	123	308	264	10	—	5.0	5.6	10.3	4.3	6.7	20.6	12	5	200
210-2, 244, 245, 248, 265	Fitters and similar Occupations ..	13,970	13,103	27,073	1,008	739	1,747	862	312	257	316	69	25	253	798	602	19	1	91	101	195	121	131	501	33	16	210-2, 244, 245, 248, 265
					72	56	65	31.8	11.5	9.5	11.7	2.5	0.9	9.3	29.5	22.2	0.7	0.0	3.4	6.5	7.2	4.8	4.8	18.5	1.2	0.6	

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TABLE H.—MORTALITY OF LEGITIMATE INFANTS CLASSIFIED BY FATHER'S OCCUPATION, 1921—continued.

Occupation Code Number.	OCCUPATION.	NUMBER OF BIRTHS.		TOTAL INFANT MORTALITY.		AGES AT DEATH (Both Sexes).				CAUSES OF DEATH (Both Sexes).										Occupation Code Number.						
		Males.	Females.	Total.	Males.	Females.	Total.	Under 4 weeks.	4 weeks-3 months.	3-6 months.	6-12 months.	Common Infectious Diseases (6-10, 25 & 2).	Tuberculous Diseases (31-37).	Diarrhoea and Enteritis (113).	Developmental and Wasting Diseases (159, 160, 161; 1, 162, 2).	Other Causes.	Syphilis (38).	Rickets (56).	Convulsions (80).		Bronchitis (99).	Pneumonia (100, 101).	Congenital Malformations (159).	Congenital Debility (160-1).	Premature Birth (161-1).	Injury at Birth (161-2).	Suffocation in bed or not stated how (180 pt.).
(1).	(2).	(3).	(4).	(5).	(6).	(7).	(8).	(9).	(10).	(11).	(12).	(13).	(14).	(15).	(16).	(17).	(18).	(19).	(20).	(21).	(22).	(23).	(24).	(25).		
737	Pursers, Stewards, etc.	1,124	1,138	2,262	85	91	176	30	29	31	36	5	39	81	50	9	5	9	14	14	20	41	3	1	1	737
738	Bargemen	1,106	1,047	2,153	116	80	206	80	33	34	59	2	46	78	69	2	4	11	26	26	8	46	3	3	3	738
744-5	Dock Labourers	5,389	5,263	10,652	663	500	1,163	37-2	15-3	15-3	27-4	4-2	231	36-2	32-0	0-9	3	49	177	177	44	105	228	8	6	744-5
753-6	Postmen, Post Office Sorters, Telegraph and Telephone Operators	2,993	2,877	5,870	123	95	109	33-0	18-2	21-7	32-4	6-0	252	38-9	38-5	1-5	0-3	75	177	16-6	9-9	21-4	20	0	6	753-6
759	Porters	2,233	2,194	4,427	240	175	415	31-0	10-6	11-2	12-4	2-9	64	27-9	22-5	0-3	—	22	40	6-8	4-3	18-6	109	7	9	759
770	Proprietors and Managers of Dealing Businesses	13,979	13,300	27,279	1,021	700	1,721	31-4	16-7	18-3	27-3	4-1	95	33-7	33-7	0-9	0-2	20	71	16-0	3-4	33	92	5	5	770
775	Salesmen and Shop Assistants	7,006	6,456	13,462	447	318	765	30-1	10-6	10-4	12-0	2-5	284	34-3	33-7	0-9	0-1	85	174	7-5	20-8	106	480	15	15	775
776	Roundsmen and Van Salesmen	1,034	951	1,985	86	43	129	29-0	10-2	8-0	9-7	2-3	129	27-2	21-7	0-8	0-5	36	65	4-8	3-9	16-9	201	3	3	776
777-8	Costermongers and Hawkers	1,386	1,379	2,765	225	156	381	45-9	10-6	11-6	13-1	2-0	9-1	30-7	22-2	—	—	25	15	7-6	5-0	18-6	37	1	0	777-8
794-5	Insurance Agents and Canvassers	1,040	996	2,036	69	50	119	28-0	11-3	9-8	9-3	1-5	18	29-0	18-7	0-5	—	6	14	3-4	6-4	14-7	1	—	—	794-5
800	Civil Service Officials and Clerks	3,501	3,376	6,877	188	145	333	17-4	6-4	48	47	10	39	29-9	16-1	0-7	—	18	27	6-9	3-9	27	93	3	3	800
805	Local Authority Officials and Clerks	1,338	1,303	2,641	84	63	147	25-3	9-3	7-0	6-8	1-5	14	24-1	16-1	0-7	—	7	13	3-9	6-4	14-7	1	—	—	805
809	Police Sergeants and Constables	3,413	3,388	6,801	261	160	421	31-9	7-8	9-0	10-6	1-5	66	29-9	18-9	0-8	0-4	8	38	4-9	4-5	17-0	128	1	—	809
811	Petty Officers and Men of the Navy	4,106	3,852	7,958	287	178	465	21-1	10-4	9-3	12-2	1-6	97	29-4	18-8	0-3	0-1	26	57	5-6	4-9	18-8	10	3	—	811
813	N.C.O.s, and Men of the Army	3,321	3,262	6,583	325	257	582	23-5	10-3	10-2	14-2	3-3	14	21-7	21-4	0-8	0-1	26	77	7-2	2-4	25	162	1	0	813
820, 826	Clergymen and Ministers	559	545	1,104	23	19	42	35-7	15-6	15-5	21-6	5-0	6	33-0	31-3	2-6	0-2	3	11	11	4	20	7	0	—	820, 826
830-1	Lawyers	346	435	781	41	35	76	20-8	5-4	8-2	8-2	0-9	—	21-7	10-0	—	—	1	1	0-9	6-3	2	11	—	—	830-1
840	Registered Medical Practitioners	696	620	1,316	23	23	46	14-1	3-8	2-6	2-6	—	—	14-1	7-7	—	—	—	3	0-9	5-1	3	—	—	—	840
841	Dentists	283	260	543	33	24	57	19-0	2-3	4-6	3-0	—	—	15-2	10-6	—	—	—	2	3	1-5	6	—	—	—	841
850-1	Teachers	1,797	1,688	3,485	71	46	117	38-7	3-7	5-5	11-0	—	17	33-1	16-6	—	—	1	3	3-7	1-8	27	3	1	—	850-1
900	Domestic Servants	984	984	1,976	48	34	82	42	19-5	5-2	9-2	2-6	20	19-2	13-5	0-6	0-3	7	14	4	16	12	29	3	—	900
914	Inn, Hotel-keepers; Publicans	1,511	1,449	2,960	93	69	162	27-3	16-2	16-2	16-2	3-5	36	26-8	32-4	1-0	—	13	15	11	3	16	2	2	—	914
915	Barmen	579	522	1,101	91	64	155	38-9	13-2	9-5	16-2	2-7	4	34	26	0-3	0-7	12	5	5	5	20	3	0	—	915
916	Waiters	467	457	924	102	67	169	33	12	24	16	6	4	22	26	—	—	4	13	11	8	20	0	—	—	916
920	Hairdressers	1,128	1,029	2,157	94	79	173	36	19	28	10	3	18	30	30	2	—	5	7	7	2	10	12	2	—	920
923	Carpet Beaters; Window Cleaners, etc.	583	525	1,108	88	58	146	35	12	23	28	6	31	31	24	0-9	—	9	12	7	3	19	3	—	—	923
931, 933-9	Clerks (not Civil Service or Local Authority); Typists	11,966	11,246	23,212	687	491	1,188	40	19	20	25	3	163	37	39	4	2	62	87	10	7	26	40	0	—	931, 933-9
940-1	Warehousemen and Storekeepers	4,354	4,011	8,365	58	44	102	26	9	7	18	1	97	23	17	0	0	27	37	4	2	14	17	0	—	940-1
943-9	Packers	1,945	1,906	3,851	82	64	146	33	13	10	15	3	55	30	26	1	—	3	9	9	2	17	6	0	—	943-9
950	Stationary Engine and Crane Drivers	3,446	3,373	6,819	162	127	289	30	11	14	18	3	14	14	28	1	1	43	5	8	5	16	7	—	—	950
951	Boiler Firemen and Stokers	2,390	2,239	4,629	91	68	159	35	13	13	17	2	85	27	30	1	0	6	66	9	4	18	7	0	—	951
970-1	General and Undefined Labourers	30,185	29,445	59,630	116	89	203	42	18	14	27	6	156	14	37	—	19	5	63	30	8	21	8	0	—	970-1

MORTALITY OF ILLEGITIMATE INFANTS.

ILLEGITIMATE BIRTHS AND FERTILITY.										MORTALITY OF ILLEGITIMATE INFANTS.																										
Occupation Code Number.	OCCUPATION OF MOTHER.	Number of Single and Widowed Females aged 16-45 Years (Census 1921).	Calculated Births.*			Proportion of Actual to 100 Calculated Births.	Births per 1,000 Single and Widowed Females aged 16-44 Years.	Deaths and Total Infant Mortality.		Ages at Death (Both Sexes).				Causes of Death (Both Sexes).											Occupation Code Number.											
			Males.	Females.	Total.			(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)		(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
—	Occupied and Unoccupied	4,513,527	19,654	18,964	38,618	38,618	100	8.6	3,403	2,712	6,115	2,468	1,244	1,189	1,214	169	103	1,097	2,233	2,513	346	338	311	575	170	736	1,186	92	68	—	010-039					
—	Occupied ..	3,345,883	14,275	13,797	28,072	30,022	94	8.4	2,515	1,954	4,469	1,720	863	883	910	129	84	840	1,753	1,663	65.1	8.1	8.8	8.1	14.9	4.4	19.1	30.6	2.4	1.8	—	040-079				
—	Unoccupied ..	1,167,644	5,379	5,167	10,546	8,596	123	9.0	888	758	1,646	748	388	306	304	40	19	257	480	850	76	0.6	8.3	7.9	15.5	4.7	20.3	23.5	0.9	—	—	080-889, 940-9				
—	Agricultural Occupations	39,754	373	334	707	363	195	17.8	58	33	91	40	23	12	16	2	3	15	32	39	5	—	8	6	14	3	8	17	—	—	—	700-769				
—	Mining and Quarrying Occupations	2,543	26	34	60	26	231	23.6	13	4	17	6	5	2	4	1	1	21	45	55	7.1	—	11.3	8.5	19.8	4.2	11.3	24.0	—	—	—	—	010-039			
—	Manufacturing Occupations (including Warehousewomen and Packers)	1,186,726	4,078	3,958	8,036	11,336	71	6.8	500	118	283	100.0	83.3	33.3	66.7	16.7	16.7	50.0	116.7	83.3	—	—	16.7	50.0	50.0	33.3	83.3	329	22	7	—	040-079				
—	Persons engaged in Transport and Communication	42,864	87	95	182	406	45	4.2	179	151	166	68.6	33.2	30.6	33.1	4.7	2.6	31.1	72.3	54.8	8.3	0.9	7.2	7.6	16.3	6.1	20.3	40.9	2.7	0.9	—	700-769				
—	Commercial and Financial Occupations (excluding Clerical Staff)	313,551	640	574	1,214	2,816	43	3.9	184	53	115	54.9	16.5	16.5	27.5	5.5	3	34	81	62	5	—	16.5	16.5	17.0	5.5	5.5	38.5	—	—	—	770-799				
—	Professional Occupations	253,157	171	168	339	1,674	20	1.3	169	127	149	62.6	32.9	26.4	27.2	0.8	2.5	28.0	66.7	51.1	4.1	6.6	4.9	16.5	3.3	23.5	34.6	3	—	—	—	770-799				
—	Persons engaged in Entertainment, etc.	18,026	107	95	202	163	124	11.2	129	143	136	50.1	35.4	23.6	26.5	2	—	23.6	76.7	29.5	11.3	4	—	—	—	3	9	12	—	—	—	820-879				
—	Persons engaged in Personal Service	1,011,755	8,178	7,940	16,118	8,493	190	15.9	93	137	114	51.5	29.7	19.8	9.9	5.0	—	19.8	54.5	34.7	7	5.9	1	2	1	2	2	34.7	—	—	—	880-899				
—	Clerks (not Civil Service or Local Authority); Typists	389,398	373	419	792	3,951	20	2.0	1,452	1,123	2,575	93.4	55.9	52.8	55.4	80	51	488	937	1,019	172	10	141	140	244	60	325	492	33	17	900-929					
—	All Other Occupations ..	88,109	242	180	422	794	53	4.8	178	141	160	57.9	34.7	32.8	34.4	5.0	3.2	30.3	53.1	63.2	10.7	0.6	8.7	15.1	3.7	20.2	30.5	2.0	1.1	—	930-939					
—	Farmers and their Relatives; Gardeners	13,776	31	45	76	106	72	5.5	186	172	180	66.4	45.0	42.7	26.1	2.4	2.4	37.9	59.2	78.2	16.6	2.4	16.6	7.1	23.7	9.5	23.7	26.1	—	—	—	—				
011-3	Agricultural Labourers, etc.	23,421	337	286	623	233	267	26.6	161	22	79	52.6	13.2	13.2	16	—	—	—	39.5	36	3	1	—	2	—	13.2	13.2	1	—	—	—	011-3				
020-5	Brick, Tile and Pottery Workers	21,180	159	154	313	215	146	14.8	154	108	133	56.2	35.3	16.1	25.7	3.2	4.3	22.5	44.9	57.8	6.4	12.8	6.4	22.5	3.2	12.8	25.7	1	—	—	—	020-5				
100-119	Chemical Workers; Makers of Soap, Candles, Paint, etc.	12,511	46	36	82	130	63	6.6	226	208	217	73.5	47.9	63.9	31.9	3.2	—	57.5	73.5	83.1	6.1	12.8	22.4	16.0	3.2	25.6	41.5	3.2	—	—	—	100-119				
140-159	Metal Workers ..	77,879	378	374	752	820	92	9.7	196	56	134	61.0	36.6	24.4	12.2	—	12.2	24.4	61.0	36.6	12.2	12.2	2	2	2	24.4	36.6	3	—	—	—	140-159				
160-279	Machine Tool Workers	13,202	71	71	142	142	100	10.8	138	110	124	50.5	25.3	21.3	26.6	2.7	—	31.9	57.2	31.9	4.0	4.0	2.7	10.6	2.7	13.3	37.2	4.0	1.3	—	—	160-279				
200	Grinders, Glaziers and Polishers	4,203	36	42	78	44	177	18.6	99	99	99	42.3	28.2	7.0	21.1	—	—	42.3	42.3	14.1	—	—	—	7.0	—	7.0	35.7	7.0	—	—	—	200				
237-8	Press Workers and Stampers	15,700	70	54	124	168	74	7.9	222	143	179	76.9	51.3	25.6	25.6	—	—	12.8	102.6	64.1	—	—	—	12.8	25.6	1	12.8	89.7	—	—	—	237-8				
254	Workers in Precious Metals and Electro Plate	9,756	55	55	110	97	113	11.3	143	107	153	64.5	16.1	24.2	48.4	2	—	32.3	96.8	24.2	1	8.1	16.1	15.1	8.1	40.3	32.3	1	—	—	—	254				
280-299									164	164	164	54.5	27.3	45.5	36.4	18.2	—	9.1	63.6	27.3	9.1	—	—	—	9.1	9.1	27.3	9.1	—	—	—	—	280-299			

TABLE I.—ILLEGITIMATE FERTILITY AND MORTALITY OF ILLEGITIMATE INFANTS CLASSIFIED BY MOTHER'S OCCUPATION, 1921—continued.

ILLEGITIMATE BIRTHS AND FERTILITY.										MORTALITY OF ILLEGITIMATE INFANTS.																		
Occupation Code Number.	Number of Single and Widowed Females aged 16-45 Years (Census 1921).	Deaths and Total Infant Mortality.				Ages at Death (Both Sexes).					Causes of Death (Both Sexes).										Occupation Code Number.							
		Males.	Females.	Total.	Proportion of Actual to 100 Calculated Births.*	Under 4 weeks.	4 weeks-3 months.	3-6 months.	6-12 months.	Common Infectious Diseases (6-10, 25 : 2).	Tuberculous Diseases (31-37).	Diarrhea and Enteritis (113).	Developmental and Wasting Diseases (159, 160, 161 : 1, 162 : 2).	All Other Causes.	Syphilis (38).	Rickets (56).	Convulsions (80).	Bronchitis (99).	Pneumonia (100, 101).	Congenital Malformations (159).		Congenital Debility and Sclerema (160 : 1).	Premature Birth (161 : 1).	Injury at Birth (161 : 2).	Suffocation in bed or not stated how (180 pt.).			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
300-329	Makers of Electrical Apparatus, Watches, Clocks, Instruments	19,554	41	36	77	211	36	3-9	78	6	39-0	26-0	2	3	13-0	1	1	1	1	1	1	1	1	1	1	1	1	300-329
330-349	Leather Workers and Leather Goods Makers	15,072	40	48	88	153	58	5-8	182	8	90-9	22-7	4	4	11-4	1	3	8	4	5	—	—	—	—	—	—	—	330-349
350-399	Textile Workers ..	350,925	1,527	1,499	3,026	3,300	92	8-6	1,775	241	74-0	112	86	224	17	7	238	201	39	5	26	26	64	25	57	139	1	350-399
362-3	Hecklers, Willowers; Card, etc., Frame Tenters	34,785	247	290	537	326	165	15-4	50	45	78-2	31-7	15	42	3	—	47	33	7	1-7	3	6	13	4	12	29	0-7	362-3
365	Spinnners and Piecers	31,625	306	265	571	323	177	18-1	53	47	78-2	31-7	27-9	34	5-6	—	35	47	9	1-9	5-6	8	10	8	10	13	4	365
366	Doublers	10,173	61	47	108	102	106	10-6	12	7	77-5	59-5	45-5	7	5-3	1-8	64-8	7	2	—	14-0	1	2	14-0	17-5	22-8	7-0	366
367	Winders, Warpners, etc.	53,965	181	169	350	487	72	6-5	28	23	77-5	59-5	45-5	9	9-3	9-3	65-7	18	6	—	9-3	1	6	3	3	13	—	367
370	Weavers ..	128,625	374	352	726	1,185	61	5-6	67	55	71-4	25-7	16	29	2-8	2-9	54	44	7	2	2-9	6	14	4	12	34	1-4	370
374	Hosiery Frame Tenters	17,024	38	60	98	172	57	5-8	7	11	71-6	34-4	22-0	6	9-6	—	74-4	5	—	—	6-9	8-3	19-3	5-5	16-5	40-8	7-4	374
379	Lookers and Examiners; Butlers and Mendlers	19,705	51	52	103	182	57	5-2	25	13	106-8	63-0	9-7	3	—	—	97-1	8	2	—	10-2	10-2	10-2	2	4	6	—	379
399	Unskilled Workers ..	22,877	107	91	198	226	88	8-7	27	15	90-9	55-6	25-3	8	—	—	21	16	3	—	19-4	—	19-4	2	5	13	9-7	399
404-408, 419	Tailoresses, Dress Makers, Corset Makers, Embroiderers, Milliners, and Sewing Machinists	304,405	663	582	1,245	2,722	46	4-1	137	88	75-5	32-9	43	5	—	10-1	106-1	80-8	15-2	25-3	5-1	25-3	10-1	25-3	65-7	3	—	404-408, 419
412-4	Boot and Shoe Makers ..	23,553	109	102	211	234	90	9-0	19	20	61-2	51-0	20-4	6	4-0	—	80-3	53-0	8-0	5-6	5-6	5-6	14-5	5-6	30-5	39-4	0-8	412-4
430-449	Makers of Foods ..	48,978	153	170	323	480	67	6-6	24	23	68-1	18-6	24-8	8	—	—	23	16	1	—	12-4	4	4	4	2	12	9-5	430-449
459	Beer and Mineral Water Bottlers, etc.	7,111	45	49	94	77	122	13-2	5	6	71-2	10-6	21-3	1	2-1	—	85-1	10-6	3-1	—	12-4	3-1	12-4	6-2	37-2	21-7	6-2	459
460-9	Tobacco Factory Operatives ..	13,987	30	34	64	140	46	4-6	13	17	62-5	46-9	31-3	1	—	—	62-5	4	—	—	—	—	10-6	10-6	10-6	53-2	—	460-9
470-499	Workers in Wood ..	12,001	71	57	128	124	103	10-7	85	14	31-3	23-4	37-3	3	—	—	39-1	5	—	—	—	—	15-6	15-6	15-6	31-3	—	470-499
510-559	Printers and Paper Workers ..	79,499	197	190	387	785	49	4-9	32	26	58-1	38-3	28-4	11	7-8	2	51-7	20	3	7-8	5-2	5-2	20-7	8	7	31-3	1	510-559
600-9	Rubber Workers ..	8,772	52	46	98	93	105	11-2	10	8	71-4	30-6	40-3	4	—	10-2	102-0	10-2	7-8	5-2	5-2	12-9	20-7	1	4	2-6	600-9	
770	Proprietors and Managers of Dealing Businesses	32,110	68	57	125	120	104	3-9	8	6	32-0	16-0	32-0	4	8-0	—	32-0	4	—	—	8-0	—	8-0	1	2	8-0	1	770
775	Saleswomen and Shop Assistants	267,630	482	409	891	2,610	34	3-3	118	105	173	32-0	22	18	—	2-2	61	43	3	5-6	5-6	5-6	12-3	4	21	34	2	775
777, 778	Costermongers and Hawkers ..	2,650	66	82	148	19	779	55-8	182	182	67-6	33-8	27-0	8	—	6-8	68-5	6	6-8	6-8	6-8	6-8	47-3	1	33-8	38-4	2-2	777, 778
800, 805	Civil Service and Local Authority Officials and Clerks	57,434	38	42	80	493	16	1-4	108	286	200	75-0	50-0	2	—	12-5	75-0	8	—	—	12-5	25-0	2	12-5	6	10	8-0	800, 805
843-5	Sick Nurses, Mental Attendants, etc.	80,500	119	116	235	548	43	2-9	18	19	37	55-3	38-3	7	2	2-6	89-4	8	3	—	8-5	8-5	2	19-8	25-6	42-0	—	843-5
850-1	Teachers ..	142,063	41	42	83	891	9	0-6	73	96	24-7	36-1	12-0	1	—	—	36-1	2	1	—	—	—	12-0	1	12-0	24-3	—	850-1
885	Actresses ..	5,477	54	41	95	51	186	17-3	5	6	11	49-7	10-2	2	—	—	49-7	52-6	—	—	—	10-5	21-7	—	10-5	37-6	—	885
900	Domestic Servants	809,953	6,718	6,644	13,362	6,991	191	16-5	93	146	170	49-7	10-2	10-5	41	62	555	583	136	9	119	117	189	30	263	395	28	900

ABSTRACTS

DEATHS OF MALES

in Several Occupations, 1921-23, classified by Age and Cause.

The numbers in brackets after the title of each occupation or occupational group are the code numbers of the occupations comprised therein. In cases where only the workers in certain industries are concerned, both occupation and industry code numbers are given. The occupation code number is preceded by the word "Occ.," and the industry code number by the word "Ind.," The full list of occupations will be found in Table A.

International List numbers of the causes of death included under the titles shown in these abstracts.

Cause of Death.	International List No.	Cause of Death.	International List No.
Influenza	11	Bronchitis	99
Respiratory tuberculosis	31	Pneumonia	100, 101
Other tuberculosis	32-37	Chronic interstitial pneumonia	107A
Syphilis, &c.—		Other diseases of respiratory system	97, 98, 102-106, 107B, 107C
Syphilis	38	Ulcer of stomach	111A
Tabes dorsalis	72	Ulcer of duodenum	111B
General paralysis of insane	76	Appendicitis	117
Aneurysm	91A	Hernia	118A
Cancer, all sites—		Intestinal obstruction	118B
Skin	48	Cirrhosis of liver	122
Lip	43 pt.	Other diseases of digestive system	108-110, 112-116 119-121, 123-127
Tongue	43 pt.	Acute nephritis	128
Esophagus	44 pt.	Chronic nephritis	129
Stomach (including pylorus)	44 pt.	Diseases of the prostate	135
Other sites	43 pt., 44 pt., 45, 47, 49	Other genito-urinary diseases	130-134, 136, 142
Chronic rheumatism, &c., gout	52	Old age	164
Diabetes	57	Suicide	165-174
Alcoholism	66	Accident	175-189, 192-196, 201-203
Cerebral hæmorrhage, &c.	74, 75A	Other causes	—
Other diseases of nervous system	70, 71, 73, 75B, 77-86		
Valvular disease of heart	90 (1-4)		
Other heart disease	87-89, 90 (5-9)		
Arterio-sclerosis	91B		
Other diseases of circulatory system	91C-96		

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

ALL OCCUPIED AND RETIRED CIVILIAN MALES.

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.									
16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—
All Ages 16 and upwards.	400	520	1,387	2,042	2,572	3,205	1,791	15,557	520	1,387	2,042	2,572	3,205	1,791	15,557	11	13	18	28
Influenza ..	2,562	5,489	10,014	11,623	10,385	6,039	1,439	48,557	400	520	1,387	2,042	2,572	1,439	48,557	69	136	133	160
Respiratory tuberculosis ..	670	737	978	1,909	701	475	1,581	4,698	737	978	1,909	701	475	1,581	4,698	18	18	13	11
Other tuberculosis ..	14	43	414	1,909	2,705	2,190	639	8,443	43	414	1,909	2,705	2,190	639	8,443	0	1	5	26
Syphilis ..	9	20	89	204	255	205	59	885	9	20	89	204	255	59	885	0	0	1	3
Tuberculous ..	—	—	24	185	458	641	239	1,730	—	24	185	458	641	239	1,730	—	—	0	3
General paralysis of insane ..	4	17	264	1,285	599	107	71	3,627	4	17	264	1,285	599	107	71	0	0	4	18
Aneurysm ..	1	6	37	240	707	745	234	2,201	1	6	37	240	707	234	2,201	0	0	3	11
Cancer, all sites ..	126	233	853	2,905	10,369	19,811	10,641	61,634	126	233	853	2,905	10,369	19,811	61,634	3	6	11	40
Skin ..	—	8	26	93	270	487	312	2,117	—	8	26	93	270	487	312	0	0	1	4
Lip ..	—	1	2	4	54	185	115	750	—	1	2	4	54	185	115	—	—	0	0
Tongue ..	—	—	7	93	640	1,271	514	3,220	—	7	93	640	1,271	514	3,220	—	—	0	1
Gonorrhea ..	—	—	13	84	845	1,680	746	4,272	—	13	84	845	1,680	746	4,272	—	—	0	1
Stomach ..	5	10	163	787	2,472	4,443	2,367	13,590	5	10	163	787	2,472	2,367	13,590	0	0	2	11
Other sites ..	121	212	642	1,844	6,088	11,745	6,587	37,685	121	212	642	1,844	6,088	11,745	6,587	3	5	9	25
Chronic rheumatism, etc., Gout ..	—	4	30	68	235	570	460	2,382	—	4	30	68	235	570	460	—	—	0	1
Diabetes ..	122	181	415	486	804	1,300	825	5,385	122	181	415	486	804	1,300	825	3	5	6	7
Alcoholism ..	315	—	13	92	121	60	17	3,277	315	—	13	92	121	60	17	—	—	0	1
Cerebral hemorrhage, etc., ..	28	68	253	815	3,098	7,757	6,219	36,277	28	68	253	815	3,098	7,757	6,219	12	—	3	11
Other dis. of the nervous system ..	486	582	1,215	1,813	2,213	2,761	1,445	13,100	486	582	1,215	1,813	2,213	2,761	1,445	13	14	16	22
Valvular disease of heart ..	32,057	630	1,626	2,628	4,506	7,558	4,925	32,057	32,057	630	1,626	2,628	4,506	7,558	4,925	10	16	22	36
Other heart disease ..	42,083	280	1,348	2,168	4,362	8,927	6,827	42,083	42,083	280	1,348	2,168	4,362	8,927	6,827	8	11	18	30
Arteriosclerosis ..	23,264	3	34	211	1,159	4,066	3,940	23,264	23,264	3	34	211	1,159	4,066	3,940	0	0	1	3
Other dis. of circulatory system ..	1,207	14	21	42	311	1,224	165	1,207	1,207	14	21	42	311	1,224	165	0	0	1	2
Bronchitis ..	41,909	43	125	446	3,534	7,665	6,422	41,909	41,909	43	125	446	3,534	7,665	6,422	1	3	6	20
Pneumonia ..	32,900	765	1,141	3,054	5,226	6,452	3,489	32,900	32,900	765	1,141	3,054	5,226	6,452	3,489	21	28	40	72
Chronic interstitial pneumonia ..	7,498	4	15	57	132	167	72	7,498	7,498	4	15	57	132	167	72	—	—	0	1
Other dis. of respiratory system ..	3,406	88	128	386	1,303	1,640	955	3,406	3,406	88	128	386	1,303	1,640	955	2	3	5	10
Other of stomach ..	3,354	43	88	759	888	730	265	3,354	3,354	43	88	759	888	730	265	1	2	4	10
Uter of duodenum ..	1,808	18	59	191	398	380	147	1,808	1,808	18	59	191	398	380	147	0	1	3	5
Appendicitis ..	3,065	391	365	472	548	480	164	3,065	3,065	391	365	472	548	480	164	10	9	6	7
Hernia ..	2,061	10	24	108	262	445	302	2,061	2,061	10	24	108	262	445	302	3	5	9	12
Intestinal obstruction ..	2,458	92	57	156	214	367	881	2,458	2,458	92	57	156	214	367	881	2	2	2	3
Cirrhosis of liver ..	3,862	5	5	11	304	970	1,225	3,862	3,862	5	5	11	304	970	1,225	0	0	0	1
Other dis. of digestive system ..	8,207	144	182	384	753	1,305	989	8,207	8,207	144	182	384	753	1,305	989	4	6	5	10
Acute nephritis ..	1,541	67	102	166	250	334	127	1,541	1,541	67	102	166	250	334	127	2	3	2	3
Chronic nephritis ..	16,323	110	211	668	1,267	2,794	4,322	16,323	16,323	110	211	668	1,267	2,794	4,322	3	5	9	17
Diseases of the prostate ..	6,269	1	—	5	13	103	857	6,269	6,269	1	—	5	13	103	857	0	0	0	1
Other genito-urinary diseases ..	4,845	17	56	164	325	679	998	4,845	4,845	17	56	164	325	679	998	0	1	2	4
Old age ..	32,559	—	—	—	—	14	—	32,559	32,559	—	—	—	—	14	—	—	—	—	—
Suicide ..	8,020	111	273	713	1,447	1,940	725	8,020	8,020	111	273	713	1,447	1,940	725	3	7	9	20
Accident ..	18,201	1,438	883	2,488	3,348	3,054	2,231	18,201	18,201	1,438	883	2,488	3,348	3,054	2,231	36	36	33	39
Other causes ..	19,479	—	—	1,777	2,363	4,282	—	19,479	19,479	—	—	1,777	2,363	4,282	—	—	—	—	—
All causes ..	509,204	9,214	14,151	30,111	46,495	103,219	63,017	509,204	509,204	9,214	14,151	30,111	46,495	103,219	63,017	247	352	399	639
Mean Annual Death-rate per 100,000.	11	13	18	28	41	50	34	11	13	18	28	41	50	34	11	11	13	18	28

CAUSE OF DEATH.

For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.

ALL MALES.

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.									
16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—
All Ages 16 and upwards.	504	571	1,456	2,103	2,633	3,269	3,785	16,151	504	571	1,456	2,103	2,633	3,269	3,785	16,151	504	571	1,456
Influenza ..	3,209	6,203	11,078	12,583	10,758	6,156	1,468	78,143	3,209	6,203	11,078	12,583	10,758	6,156	1,468	78,143	12	13	19
Respiratory tuberculosis ..	971	887	1,098	2,173	2,933	2,489	1,831	24,200	971	887	1,098	2,173	2,933	2,489	1,831	24,200	24	20	14
Other tuberculosis ..	36	48	469	2,013	2,774	2,113	64	0	36	48	469	2,013	2,774	2,113	64	0	1	1	1
Syphilis ..	18	22	88	219	274	213	45	0	18	22	88	219	274	213	45	0	0	1	3
Tuberculous ..	—	—	26	199	491	666	198	—	—	26	199	491	666	666	198	—	—	0	3
General paralysis of insane ..	15	20	322	1,477	1,392	633	108	73	15	20	322	1,477	1,392	633	108	0	0	4	20
Aneurysm ..	6	6	40	278	776	786	254	0	6	6	40	278	776	786	254	0	0	1	12
Cancer, all sites ..	161	251	842	3,044	10,640	20,243	17,416	4	161	251	842	3,044	10,640	20,243	17,416	4	6	11	41
Skin ..	2,192	8	29	94	276	505	314	—	2,192	8	29	94	276	505	314	—	0	0	1
Lip ..	—	1	2	6	59	188	118	—	—	1	2	6	59	188	118	—	0	0	1
Tongue ..	—	1	9	100	655	1,311	734	—	—	9	100	655	1,311	1,311	734	—	0	0	1
Gonorrhea ..	4,409	1	13	90	870	1,717	769	—	4,409	1	13	90	870	1,717	769	—	0	0	1
Stomach ..	13,899	5	10	830	2,534	5,503	3,434	—	13,899	5	10	830	2,534	5,503	3,434	—	0	2	11
Other sites ..	38,958	156	230	1,924	6,246	12,019	6,772	—	38,958	156	230	1,924	6,246	12,019	6,772	—	5	9	26
Chronic rheumatism, etc., Gout ..	2,471	6	32	72	241	588	473	—	2,471	6	32	72	241	588	473	—	4	9	26
Diabetes ..	5,680	156	454	506	832	1,342	856	—	5,680	156	454	506	832	1,342	856	—	4	6	7
Alcoholism ..	37	72	279	864	3,199	7,949	949	—	37	72	279	864	3,199	7,949	949	—	0	1	2
Cerebral hemorrhage, etc., ..	14,667	816	1,513	1,831	2,354	2,904	2,937	—	14,667	816	1,513	1,831	2,354	2,904	2,937	—	19	19	24
Other dis. of the nervous system ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20	24	37
Valvular disease of heart ..	33,300	532	1,721	2,758	4,657	7,734	5,032	—	33,300	532	1,721	2,758	4,657	7,734	5,032	—	13	16	22
Other heart disease ..	24,782	383	1,442	2,276	4,512	9,154	18,498	—	24,782	383	1,442	2,276	4,512	9,154	18,498	—	9	11	18
Arteriosclerosis ..	4,163	3	36	230	1,203	4,199	14,442	—	4,163	3	36	230	1,203	4,199	14,442	—	0	1	3

SOCIAL CLASS I.—UPPER AND MIDDLE (Civilians only).													SOCIAL CLASS II.—INTERMEDIATE BETWEEN I AND III (Civilians only).												
CAUSE OF DEATH.													SOCIAL CLASS II.—INTERMEDIATE BETWEEN I AND III (Civilians only).												
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.													SOCIAL CLASS II.—INTERMEDIATE BETWEEN I AND III (Civilians only).												
Mean Annual Death-rate per 100,000.													Mean Annual Death-rate per 100,000.												
Numbers of Deaths at Ages—													Numbers of Deaths at Ages—												
All Ages 16 and upwards.													All Ages 16 and upwards.												
16—20—25—35—45—55—65—70 and upwards.													16—20—25—35—45—55—65—70 and upwards.												
Influenza													Influenza												
Respiratory tuberculosis													Respiratory tuberculosis												
Other tuberculosis													Other tuberculosis												
Syphilis, etc.													Syphilis, etc.												
Tubercularis													Tubercularis												
General paralysis of insane													General paralysis of insane												
Aneurysm													Aneurysm												
Cancer, all sites													Cancer, all sites												
Skin													Skin												
Lip													Lip												
Tongue													Tongue												
Esophagus													Esophagus												
Stomach													Stomach												
Other sites													Other sites												
Chronic rheumatism, etc., Gout													Chronic rheumatism, etc., Gout												
Diabetes													Diabetes												
Alcoholism													Alcoholism												
Cerebral hemorrhage, etc.													Cerebral hemorrhage, etc.												
Other dis. of the nervous system													Other dis. of the nervous system												
Valvular disease of heart													Valvular disease of heart												
Other heart disease													Other heart disease												
Arterio-sclerosis													Arterio-sclerosis												
Dis. of circulatory system													Dis. of circulatory system												
Bronchitis													Bronchitis												
Pneumonia													Pneumonia												
Chronic interstitial pneumonia													Chronic interstitial pneumonia												
Other dis. of respiratory system													Other dis. of respiratory system												
Ulcer of stomach													Ulcer of stomach												
Ulcer of duodenum													Ulcer of duodenum												
Appendicitis													Appendicitis												
Hernia													Hernia												
Intestinal obstruction													Intestinal obstruction												
Cirrhosis of liver													Cirrhosis of liver												
Other dis. of digestive system													Other dis. of digestive system												
Acute nephritis													Acute nephritis												
Chronic nephritis													Chronic nephritis												
Dis. of the prostate													Dis. of the prostate												
Other genito-urinary diseases													Other genito-urinary diseases												
Old age													Old age												
Suicide													Suicide												
Accident													Accident												
Other causes													Other causes												
All causes													All causes												
Years of life (Census population × 3)													Years of life (Census population × 3)												
Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.													Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.												
All Causes—ages 20–65 years.													All Causes—ages 20–65 years.												
Comparative Mortality Figure (Standardized Death-rate)													Comparative Mortality Figure (Standardized Death-rate)												
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males													Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males												

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

SOCIAL CLASS IV.—INTERMEDIATE BETWEEN III AND V (Civilians only).

Mean Annual Death-rate per 100,000.											Numbers of Deaths at Ages—											For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.											Mean Annual Death-rate per 100,000.										
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Years of life (Census population × 3) ...

OCCUPATIONAL GROUP 1.—FARMERS AND THEIR RELATIVES RETURNED AS ASSISTING IN THE WORK OF THE FARM (011, 012).

OCCUPATIONAL GROUP 1.—FARMERS AND THEIR RELATIVES RETURNED AS ASSISTING IN THE WORK OF THE FARM (011, 012).

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.										For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.																																																																																																																																																																																																																																																																																																																																																																																																																			
All Ages 16 and upwards.										16—20—25—35—45—55—65—70 and upwards.										Mean Annual Death-rate per 100,000.																																																																																																																																																																																																																																																																																																																																																																																																																			
16—20—25—35—45—55—65—70 and upwards.										16—20—25—35—45—55—65—70 and upwards.										Mean Annual Death-rate per 100,000.																																																																																																																																																																																																																																																																																																																																																																																																																			
59	64	69	74	79	84	89	94	99	104	109	114	119	124	129	134	139	144	149	154	159	164	169	174	179	184	189	194	199	204	209	214	219	224	229	234	239	244	249	254	259	264	269	274	279	284	289	294	299	304	309	314	319	324	329	334	339	344	349	354	359	364	369	374	379	384	389	394	399	404	409	414	419	424	429	434	439	444	449	454	459	464	469	474	479	484	489	494	499	504	509	514	519	524	529	534	539	544	549	554	559	564	569	574	579	584	589	594	599	604	609	614	619	624	629	634	639	644	649	654	659	664	669	674	679	684	689	694	699	704	709	714	719	724	729	734	739	744	749	754	759	764	769	774	779	784	789	794	799	804	809	814	819	824	829	834	839	844	849	854	859	864	869	874	879	884	889	894	899	904	909	914	919	924	929	934	939	944	949	954	959	964	969	974	979	984	989	994	999	1,004	1,009	1,014	1,019	1,024	1,029	1,034	1,039	1,044	1,049	1,054	1,059	1,064	1,069	1,074	1,079	1,084	1,089	1,094	1,099	1,104	1,109	1,114	1,119	1,124	1,129	1,134	1,139	1,144	1,149	1,154	1,159	1,164	1,169	1,174	1,179	1,184	1,189	1,194	1,199	1,204	1,209	1,214	1,219	1,224	1,229	1,234	1,239	1,244	1,249	1,254	1,259	1,264	1,269	1,274	1,279	1,284	1,289	1,294	1,299	1,304	1,309	1,314	1,319	1,324	1,329	1,334	1,339	1,344	1,349	1,354	1,359	1,364	1,369	1,374	1,379	1,384	1,389	1,394	1,399	1,404	1,409	1,414	1,419	1,424	1,429	1,434	1,439	1,444	1,449	1,454	1,459	1,464	1,469	1,474	1,479	1,484	1,489	1,494	1,499	1,504	1,509	1,514	1,519	1,524	1,529	1,534	1,539	1,544	1,549	1,554	1,559	1,564	1,569	1,574	1,579	1,584	1,589	1,594	1,599	1,604	1,609	1,614	1,619	1,624	1,629	1,634	1,639	1,644	1,649	1,654	1,659	1,664	1,669	1,674	1,679	1,684	1,689	1,694	1,699	1,704	1,709	1,714	1,719	1,724	1,729	1,734	1,739	1,744	1,749	1,754	1,759	1,764	1,769	1,774	1,779	1,784	1,789	1,794	1,799	1,804	1,809	1,814	1,819	1,824	1,829	1,834	1,839	1,844	1,849	1,854	1,859	1,864	1,869	1,874	1,879	1,884	1,889	1,894	1,899	1,904	1,909	1,914	1,919	1,924	1,929	1,934	1,939	1,944	1,949	1,954	1,959	1,964	1,969	1,974	1,979	1,984	1,989	1,994	1,999	2,004	2,009	2,014	2,019	2,024	2,029	2,034	2,039	2,044	2,049	2,054	2,059	2,064	2,069	2,074	2,079	2,084	2,089	2,094	2,099	2,104	2,109	2,114	2,119	2,124	2,129	2,134	2,139	2,144	2,149	2,154	2,159	2,164	2,169	2,17

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 2.—GARDENERS AND THEIR LABOURERS (013, 025).										OCCUPATIONAL GROUP 3.—FARM BAILIFFS AND FOREMEN (015).									
CAUSE OF DEATH.										CAUSE OF DEATH.									
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.										For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.									
Mean Annual Death-rate per 100,000.										Mean Annual Death-rate per 100,000.									
Numbers of Deaths at Ages—										Numbers of Deaths at Ages—									
16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.				
366	19	133	110	99	73	53	159	28	29	21	33	44	53	21	26				
591	4	6	7	7	14	31	36	2	2	1	1	1	1	1	1				
68	4	9	11	14	11	6	9	8	8	16	16	16	16	16	16				
105	1	—	2	2	1	4	—	—	—	—	—	—	—	—	—				
9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
17	1	—	1	2	6	5	3	—	—	—	—	—	—	—	—				
34	1	—	6	14	16	3	1	—	—	—	—	—	—	—	—				
45	—	—	1	1	1	5	—	—	—	—	—	—	—	—	—				
1,763	1	3	36	168	534	309	703	159	159	33	112	361	1869	914	267				
66	—	1	—	2	10	14	39	11	11	—	—	—	—	—	—				
30	—	—	1	1	5	5	18	—	—	—	—	—	—	—	—				
86	—	—	1	7	33	17	28	—	—	—	—	—	—	—	—				
127	—	—	3	3	34	31	42	—	—	—	—	—	—	—	—				
368	—	—	3	49	99	80	135	—	—	—	—	—	—	—	—				
1,086	1	2	28	92	353	162	441	105	105	22	74	267	474	1246	—				
62	—	—	1	3	12	8	38	—	—	—	—	—	—	—	—				
96	—	—	1	13	15	21	33	—	—	—	—	—	—	—	—				
2	—	—	1	1	135	142	656	—	—	—	—	—	—	—	—				
970	1	1	2	4	29	68	107	79	79	—	—	—	—	—	—				
301	6	13	23	19	63	33	101	26	26	—	—	—	—	—	—				
911	4	7	30	74	177	160	435	86	86	—	—	—	—	—	—				
1,114	6	5	18	59	175	163	661	111	111	—	—	—	—	—	—				
637	—	—	2	6	61	83	479	66	66	—	—	—	—	—	—				
29	—	—	2	14	22	22	114	4	4	—	—	—	—	—	—				
1,057	—	1	7	17	93	124	811	78	78	—	—	—	—	—	—				
550	3	7	24	43	82	116	201	52	52	—	—	—	—	—	—				
6	—	—	2	4	1	2	—	1	1	—	—	—	—	—	—				
167	—	—	5	17	27	18	94	10	10	—	—	—	—	—	—				
36	—	—	2	7	22	11	14	3	3	—	—	—	—	—	—				
59	8	6	9	6	12	5	5	7	7	—	—	—	—	—	—				
65	—	—	3	3	11	10	39	3	3	—	—	—	—	—	—				
67	—	—	2	2	13	12	31	6	6	—	—	—	—	—	—				
43	—	—	5	5	20	4	14	2	2</										

OCCUPATIONAL GROUP 4.—WOODMEN AND LABOURERS IN WOODS AND FORESTS (016, 027).													OCCUPATIONAL GROUP 5.—AGRICULTURAL LABOURERS (including Shepherds) (020, 022-4).												
Mean Annual Death-rate per 100,000.													Mean Annual Death-rate per 100,000.												
Numbers of Deaths at Ages—													Numbers of Deaths at Ages—												
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 upwards.	70 and upwards.				All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 upwards.	70 and upwards.			
CAUSE OF DEATH.	For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.												CAUSE OF DEATH.	For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.											
Influenza	802	21	32	37	69	78	146	120	299	8	16	13	27	32	8	16	13	27	32	71	152	325	70	up.	
Respiratory tuberculosis	1,222	99	209	286	192	195	145	48	38	39	106	106	76	80	39	106	106	76	80	70	41	152	325	70	
Other tuberculosis	217	37	32	50	28	29	26	19	3	14	16	11	11	12	14	16	11	11	12	13	9	9	9	9	
Syphilis, etc.	153	—	2	4	19	47	39	19	18	—	—	—	—	8	—	—	—	8	19	19	24	20	20	20	
Tuberculosis	16	—	—	—	3	3	2	1	3	—	—	—	—	1	—	—	—	1	1	1	1	1	1	1	
Tabes dorsalis	27	—	—	—	2	8	11	4	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
General paralysis of insane	57	—	—	—	3	10	17	4	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Aneurysm	53	—	—	—	2	4	9	12	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Cancer, all sites	2,721	9	7	25	61	266	744	466	1,143	4	4	9	24	109	4	4	9	24	109	361	589	1,242	12	12	
Skin	163	—	—	1	2	11	31	18	100	—	—	—	—	5	—	—	—	5	15	23	109	109	109	109	
Lip	128	—	—	—	1	5	28	12	82	—	—	—	—	0	—	—	—	0	2	14	15	89	89	89	
Tongue	177	—	—	—	—	11	23	10	32	—	—	—	—	2	—	—	—	2	11	13	35	35	35	35	
Pharynx	129	—	—	—	—	43	31	33	33	—	—	—	—	9	—	—	—	9	21	39	36	36	36	36	
Oesophagus	139	—	—	—	—	22	205	133	258	—	—	—	—	8	—	—	—	8	31	99	168	280	280	280	
Stomach	636	1	7	3	21	75	205	133	258	—	—	—	—	31	—	—	—	31	99	168	280	280	280	280	
Other sites	1,528	8	7	20	37	142	414	262	638	3	4	7	15	58	3	4	7	15	58	201	331	693	693	693	
Chronic rheumatism, etc., Gout	151	—	—	—	3	5	27	30	86	—	—	—	—	1	—	—	—	1	2	13	38	93	93	93	
Diabetes	143	—	13	15	16	11	27	12	45	—	—	—	—	5	—	—	—	5	13	15	49	49	49	49	
Alcoholism	1785	2	3	8	21	64	228	271	1,188	1	2	3	8	26	1	2	3	8	26	111	343	1,291	1,291	1,291	
Cerebral hemorrhage, etc.	644	28	37	69	58	83	119	66	184	11	19	25	23	34	11	19	25	23	34	58	83	200	200	200	
Other dis. of the nervous system	1,631	12	25	37	66	116	311	273	791	5	13	13	26	48	5	13	13	26	48	151	345	860	860	860	
Valvular disease of heart	1,270	10	17	34	52	111	321	347	1,270	4	9	12	21	46	4	9	12	21	46	156	339	1,380	1,380	1,380	
Other heart disease	1,159	10	17	34	52	111	321	347	1,159	4	9	12	21	46	4	9	12	21	46	156	339	1,380	1,380	1,380	
Arterio-sclerosis	2,154	2	6	4	24	52	220	274	1,572	1	3	1	9	21	1	3	1	9	21	107	346	1,708	1,708	1,708	
Other dis. of circulatory system	2,154	2	6	4	24	52	220	274	2,154	1	3	1	9	21	1	3	1	9	21	107	346	1,708	1,708	1,708	
Bronchitis	1,061	20	47	73	108	154	224	151	284	8	24	26	43	63	8	24	26	43	63	109	191	309	309	309	
Pneumonia	305	6	5	1	22	27	68	44	127	2	3	2	5	17	2	3	2	5	17	33	53	138	138	138	
Chronic interstitial pneumonia	101	2	5	8	12	17	26	12	19	1	3	3	5	7	1	3	3	5	7	13	18	21	21	21	
Other dis. of respiratory system	59	2	1	1	13	14	17	7	4	—	—	—	—	8	—	—	—	8	13	18	21	21	21		
Ulcer of stomach	102	21	9	13	12	15	13	13	6	8	5	5	5	6	8	5	5	5	6	6	16	7	7	7	
Ulcer of duodenum	137	1	2	5	9	15	22	15	72	0	1	2	2	4	0	1	2	2	4	11	19	78	78	78	
Appendicitis	136	10	2	5	9	17	33	21	39	4	1	2	4	7	4	1	2	4	7	11	19	78	78	78	
Hernia	62	6	8	12	12	12	19	12	16	2	4	4	5	9	2	4	4	5	9	11	27	42	42	42	
Intestinal obstruction	351	—	—	—	—	—	60	39	183	—	—	—	—	13	—	—	—	13	23	49	199	199	199	199	
Other dis. of digestive system	49	4	7	4	4	8	10	4	8	2	4	1	2	3	2	4	1	2	3	5	5	9	9	9	
Acute nephritis	566	4	7	27	27	64	111	85	241	2	4	10	11	26	2	4	10	11	26	54	107	262	262	262	
Chronic nephritis	297	—	—	—	—	—	24	40	229	—	—	—	—	2	—	—	—	2	12	51	249	249	249	249	
Diseases of the prostate	3,012	1	2	10	9	21	11	80	2,921	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Other genito-urinary diseases	3,012	1	2	10	9	21	11	80	2,921	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Old age	371	13	18	51	40	68	95	39	47	5	9	18	16	28	5	9	18	16	28	46	49	51	51	51	
Suicide	371	13	18	51	40	68	95	39	47	5	9	18	16	28	5	9	18	16	28	46	49	51	51	51	
Accident	1,029	44	39	74	95	111	159	77	169	31	35	26	38	46	31	35	26	38	46	77	97	184	184	184	
Other causes	23,694	437	605	947	1,053	1,775	3,563	2,870	12,444	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
All causes	23,694	437	605	947	1,053	1,775	3,563	2,870	12,444	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Years of life (Census population × 3)	1,604,286	255,525	196,947	278,406	252,903	243,096	206,295	79,098	92,016	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	—	69	87	85	65	63	67	73	100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Comparative Mortality Figure (Standardized Death-rate)	688	688	688	688	688	688	688	688	688	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males	69	69	69	69	69	69	69	69	69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 6.—COAL MINE—SUBORDINATE SUPERINTENDING STAFF (041).*										OCCUPATIONAL GROUP 7.—COAL MINE—HEWERS AND GETTERS (042).*									
Numbers of Deaths at Ages—										Numbers of Deaths at Ages—									
Mean Annual Death-rate per 100,000.										Mean Annual Death-rate per 100,000.									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	
66	—	—	—	—	—	—	—	13	Influenza ..	594	10	32	95	92	90	123	53	99	70
77	—	—	—	—	—	—	—	2	Respiratory tuberculosis ..	1,486	49	175	367	399	290	152	40	14	and
9	—	—	—	—	—	—	—	83	Other tuberculosis ..	1,468	14	25	54	30	21	18	5	14	up.
18	—	—	—	—	—	—	—	41	Syphilis, etc. ..	275	—	—	27	76	95	58	12	7	
—	—	—	—	—	—	—	—	—	Syphilis ..	19	—	—	4	6	6	2	—	1	
3	—	—	—	—	—	—	—	—	Tabes dorsalis ..	50	—	—	1	9	17	16	4	3	
8	—	—	—	—	—	—	—	—	General paralysis of insane ..	161	—	—	21	56	54	24	5	4	
7	—	—	—	—	—	—	—	—	Aneurysm ..	45	—	—	1	5	18	16	3	2	
132	—	—	—	—	—	—	—	41	Cancer, all sites ..	1,425	2	14	44	136	319	450	217	243	
—	—	—	—	—	—	—	—	7	Skin ..	53	—	—	—	5	14	9	11	14	
—	—	—	—	—	—	—	—	—	Lip ..	15	—	—	—	—	—	10	1	4	
4	—	—	—	—	—	—	—	—	Tongue ..	54	—	—	—	3	22	16	8	5	
8	—	—	—	—	—	—	—	—	Esophagus ..	42	—	—	1	3	10	17	5	6	
57	—	—	—	—	—	—	—	—	Stomach ..	450	—	—	12	45	101	154	70	66	
110	—	—	—	—	—	—	—	—	Other sites ..	811	2	12	31	80	172	244	122	148	
—	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..	53	—	—	—	2	7	19	12	12	
16	—	—	—	—	—	—	—	—	Diabetes ..	91	—	—	18	23	19	7	9	8	
37	—	—	—	—	—	—	—	—	Alcoholism ..	4	—	—	3	1	31	229	211	508	
38	—	—	—	—	—	—	—	—	Cerebral hemorrhage, etc. ..	1,086	1	16	62	69	90	92	47	62	
—	—	—	—	—	—	—	—	—	Other dis. of the nervous system ..	447	9	16	62	69	90	92	47	62	
99	—	—	—	—	—	—	—	—	Valvular disease of heart ..	870	14	17	60	99	157	209	115	199	
132	—	—	—	—	—	—	—	—	Other heart disease ..	1,023	6	9	63	74	113	226	178	354	
86	—	—	—	—	—	—	—	—	Arterio-sclerosis ..	601	—	—	2	6	25	108	102	360	
5	—	—	—	—	—	—	—	—	Other dis. of circulatory system ..	18	—	—	4	3	2	2	3	2	
149	—	—	—	—	—	—	—	—	Bronchitis ..	1,842	1	4	17	43	141	384	332	920	
—	—	—	—	—	—	—	—	—	Pneumonia ..	1,162	27	74	177	249	253	180	89	113	
88	—	—	—	—	—	—	—	—	Chronic interstitial pneumonia ..	39	—	—	1	2	14	12	6	4	
3	—	—	—	—	—	—	—	—	Other dis. of respiratory system ..	269	3	4	18	27	39	71	37	70	
40	—	—	—	—	—	—	—	—	Ulcer of stomach ..	90	1	2	15	27	21	16	5	3	
9	—	—	—	—	—	—	—	—	Ulcer of duodenum ..	60	—	5	18	15	14	5	1	2	
7	—	—	—	—	—	—	—	—	Appendicitis ..	105	12	19	25	27	8	11	1	2	
12	—	—	—	—	—	—	—	—	Hernia ..	45	—	—	4	2	12	9	8	10	
6	—	—	—	—	—	—	—	—	Intestinal obstruction ..	66	—	6	2	2	9	15	6	17	
12	—	—	—	—	—	—	—	—	Cirrhosis of liver ..	66	—	—	1	3	13	25	15	19	
31	—	—	—	—	—	—	—	—	Other dis. of digestive system ..	256	1	13	20	24	45	51	27	75	
—	—	—	—	—	—	—	—	—	Acute nephritis ..	68	5	8	9	9	18	11	4	4	
2	—	—	—	—	—	—	—	—	Chronic nephritis ..	364	2	8	32	40	65	86	41	90	
44	—	—	—	—	—	—	—	—	Diseases of the prostate ..	89	—	—	2	—	3	17	15	52	
15	—	—	—	—	—	—	—	—	Other genito-urinary diseases ..	109	—	—	8	8	25	25	9	32	
15	—	—	—	—	—	—	—	—	Old age ..	1,010	—	—	—	—	2	13	47	948	
25	—	—	—	—	—	—	—	—	Suicide ..	271	1	17	24	61	62	59	26	21	
164	—	—	—	—	—	—	—	—	Accident ..	1,454	82	161	379	329	258	142	37	66	
84	—	—	—	—	—	—	—	—	Other causes ..	679	19	43	103	124	151	123	48	68	
1,708	3	10	84	151	310	408	203	539	All causes ..	16,185	264	664	1,662	2,040	2,474	2,948	1,758	4,375	
124,878	1,011	4,164	24,207	39,072	33,834	16,713	3,456	2,421	Years of life (Census population × 3) ..	1,585,752	123,840	223,254	456,531	362,052	254,244	109,101	27,120	29,610	
—	120	68	87	60	79	95	118	164	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	—	86	84	91	88	84	105	130	109	
Comparative Mortality Figure (Standardized Death-rate) Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..										Comparative Mortality Figure (Standardized Death-rate) Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..									
All Causes—ages 20-65 years.										All Causes—ages 20-65 years.									
823										938									
81										92									

* For an analysis of the mortality of these workers in different parts of the country see pages 95-102.

OCCUPATIONAL GROUP 9.—COAL MINE—PERSONS MAKING AND REPAIRING ROADS (044).

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.							
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		16—	20—	25—	35—	45—	55—	65—	70 and up.
136	1	4	17	10	20	41	21	22	5	11	22	49	28	58	148	230	562
215	4	33	45	46	44	30	8	5		43	179	129	131	127	108	88	128
17	2	4	2	3	1	3	2			22	22	6	6	26	35	40	22
36	—	—	2	3	12	11	—	—		—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—
5	—	—	—	1	2	1	1	—		—	—	—	—	3	6	4	11
15	—	—	—	3	6	5	—	—		—	—	—	—	9	17	18	11
11	—	—	—	2	4	5	—	—		—	—	—	—	6	12	18	—
341	—	—	3	16	73	131	61	54		16	9	45	210	471	670	1379	51
10	—	—	—	—	2	5	1	2		—	—	—	—	6	18	11	—
4	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—
15	—	—	—	—	1	4	2	1		—	—	—	—	3	7	11	—
11	—	—	—	—	5	7	3	—		—	—	—	—	12	25	11	—
97	—	—	—	—	2	2	1	—		—	—	—	—	14	7	33	25
204	—	—	1	4	24	41	16	11		—	—	—	—	11	69	148	176
29	—	3	2	11	37	74	39	38		16	6	31	107	266	428	971	—
12	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—
17	—	—	2	—	—	7	2	3		16	6	—	—	—	25	22	77
1	—	3	—	—	—	—	3	1		—	—	—	—	14	11	33	26
261	—	—	2	—	—	—	—	—		—	—	—	—	3	—	—	—
69	4	3	10	4	25	15	7	—		111	16	29	28	72	505	2835	—
215	1	3	4	12	29	74	33	59		43	16	29	28	23	54	77	307
193	—	1	8	10	16	67	43	48		5	5	23	28	46	241	472	1507
121	—	—	—	—	8	26	31	56		—	—	—	—	23	94	340	1430
5	—	—	—	—	1	1	1	—		—	—	—	—	3	4	11	26
319	—	—	4	7	28	79	77	124		—	—	—	—	1	20	81	3167
193	1	10	20	23	35	60	30	14		11	54	57	65	101	216	329	358
10	—	—	2	2	3	4	1	—		—	—	—	—	6	9	14	—
65	—	—	2	6	15	16	10	—		—	—	—	—	17	43	58	110
13	—	—	5	—	—	4	1	—		—	—	—	—	6	14	14	409
10	—	1	1	1	—	3	1	—		—	—	—	—	3	9	11	—
10	—	2	—	2	3	1	2	—		—	—	—	—	—	—	—	—
13	1	—	—	—	3	3	—	—		—	—	—	—	6	9	4	—
14	—	2	—	4	1	2	—	—		11	—	—	—	9	14	—	—
16	—	—	—	1	4	5	5	—		5	11	—	—	11	3	—	128
71	2	—	5	1	14	18	9	22		—	—	—	—	3	12	18	128
13	1	3	2	1	2	3	—	—		—	—	—	—	14	3	40	562
70	—	2	2	5	6	28	17	10		11	16	6	3	6	11	—	26
30	—	2	—	—	—	6	12	12		—	—	—	—	17	101	187	235
237	—	—	—	—	—	5	4	—		—	—	—	—	12	22	132	307
137	—	—	—	—	—	1	8	128		—	—	—	—	6	18	44	134
35	—	1	4	3	6	15	4	2		—	—	—	—	—	—	—	3269
269	8	20	37	52	63	59	17	13		5	11	9	17	5	54	44	51
119	2	3	8	26	31	22	16	—		87	109	106	148	181	212	187	332
3,069	27	100	184	263	462	817	474	742		293	544	527	746	1330	2939	5203	1895.3

CAUSE OF DEATH.
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.

Influenza
Respiratory tuberculosis
Other tuberculosis
Syphilis, etc.
Tuberculosis
General paralysis of insane
Aneurysm
Cancer, all sites
Skin
Lip
Tongue
Gastrophagus
Stomach
Other sites
Chronic rheumatism, etc., Gout
Diabetes
Alcoholism
Cerebral hemorrhage, etc.
Other dis. of the nervous system
Valvular disease of heart
Other heart disease
Arterio-sclerosis
Other dis. of circulatory system
Bronchitis
Pneumonia
Chronic interstitial pneumonia
Other dis. of respiratory system
Ulcer of stomach
Ulcer of duodenum
Appendicitis
Hernia
Intestinal obstruction
Cirrhosis of liver
Other dis. of digestive system
Acute nephritis
Chronic nephritis
Diseases of the prostate
Other genito-urinary diseases
Old age
Suicide
Accident
Other causes
All causes

173,298
—

Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

1,191
118

OCCUPATIONAL GROUP 8.—COAL MINE—PERSONS CONVEYING MATERIAL TO THE SHAFT (043).

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.							
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		16—	20—	25—	35—	45—	55—	65—	70 and up.
106	40	16	17	8	5	12	1	7		21	16	28	26	28	163	62	894
346	105	106	67	32	24	9	2	1		55	107	111	103	135	122	125	128
73	36	29	6	1	1	3	—	—		19	29	10	3	6	—	—	—
24	—	—	5	7	6	2	—	—		—	—	8	22	34	41	125	—
3	—	—	—	—	1	—	—	—		—	—	—	—	6	27	—	—
2	—	—	—	—	—	—	—	—		—	—	—	—	6	—	62	—
16	—	—	4	7	4	—	—	—		—	—	7	22	22	—	—	—
3	—	—	—	—	—	1	—	—		—	—	2	7	45	14	62	—
103	8	4	4	14	24	28	11	10		4	4	7	381	687	1277	255	—
4	—	—	1	—	—	1	—	2		—	—	2	—	—	14	—	—
5	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—
21	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—
67	7	4	2	12	14	15	7	6		4	4	3	38	79	204	437	766
2	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—
27	8	1	1	—	—	—	—	—		—	4	5	12	—	—	62	128
76	1	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—
81	26	10	11	9	14	8	—	25		1	1	5	13	67	245	749	3193
114	22	18	11	19	14	19	5	3		14	10	16	29	79	109	383	—
68	8	11	13	15	6	21	6	6		12	18	16	61	79	258	312	766
17	5	—	—	—	3	2	1	8		4	11	22	48	34	285	375	1022
81	2	—	—	—	2	—	—	11		—	—	—	—	17	27	62	1405
176	55	37	25	21	15	15	12	14		1	2	10	29	62	340	749	1788
1	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—
34	4	5	3	5	6	6	4	4		29	37	42	67	84	204	250	511
22	5	2	5	5	3	1	3	—		2	5	16	34	82	187	255	—
6	1	2	1	2	—	—	—	—		3	2	8	16	17	14	62	—
32	13	10	6	2	1	—	—	—		1	2	2	6	—	—	—	—
9	2	2	—	—	—	—	—	—		7	10	10	6	6	—	—	—
19	5	3	5	3	3	—	—	—		1	2	2	—	17	14	—	—
5	—	—	—	—	2	—	—	—		3	3	8	10	17	—	—	—
33	8	4	3	7	2	6	2	1		4	4	5	22	11	82	125	128
12	2	4	—	—	—	—	—	—		—	—	—	—	—	—	—	—
46	7	5	11	7	5	4	6	—		1	4	5	16	28	54	375	128
9	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—
14	2	1	2	1	1	3	2	2		—	—	—	—	—	—	—	—
26	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—
36	3	6	7	7	8	2	3	—		2	6	12	22	45	27	187	—
503	191	97	82	59	51	19	4	—		100	98	136	189	287	258	250	—
141	48	36	18	11	11	10	3	4		—	—	—	—	—	—	—	—
2,267	604	418	320	256	236	222	84	127		316	420	531	820	1326	3018	5243	16220

Years of life (Census population × 3)
Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.

783
119

1,602
105

Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

1,204
122

All Causes—ages 20-65 years.
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

1,191
118

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 10.—COAL MINE—OTHER WORKERS BELOW GROUND (047).

OCCUPATIONAL GROUP 8-10.—COAL MINE—UNDERGROUND WORKERS, NOT HEWERS OR SUPERINTENDING STAFF (043-047).

Mean Annual Death-rate per 100,000.										Mean Annual Death-rate per 100,000.									
Numbers of Deaths at Ages—										Numbers of Deaths at Ages—									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	70 and up.	All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	70 and up.
193	11	13	14	22	34	53	71	23	23	485	52	33	48	40	59	106	45	52	560
341	25	54	68	76	118	144	125	71	232	902	17	193	177	154	139	82	17	6	65
39	7	15	18	10	12	10	10	22	71	129	37	37	16	13	7	3	3	10	15
58	1	4	7	27	43	29	60	44	60	118	1	1	11	30	39	24	10	2	22
4	1	1	2	4	2	4	2	22	22	12	—	—	2	5	2	2	—	1	11
10	—	—	—	—	—	—	—	—	—	17	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	—	86	—	—	—	—	—	—	—	—	—
19	—	—	—	—	—	—	—	—	—	33	—	—	—	—	—	—	—	—	—
15	—	—	—	—	—	—	—	—	—	863	—	—	—	—	—	—	—	—	—
15	—	—	—	—	—	—	—	—	—	29	—	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—	—	10	—	—	—	—	—	—	—	—	—
21	—	—	—	—	—	—	—	—	—	41	—	—	—	—	—	—	—	—	—
17	—	—	—	—	—	—	—	—	—	34	—	—	—	—	—	—	—	—	—
135	—	—	—	—	—	—	—	—	—	253	—	—	—	—	—	—	—	—	—
225	—	—	—	—	—	—	—	—	—	496	—	—	—	—	—	—	—	—	—
13	—	—	—	—	—	—	—	—	—	27	—	—	—	—	—	—	—	—	—
31	—	—	—	—	—	—	—	—	—	75	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	4	—	—	—	—	—	—	—	—	—
264	—	—	—	—	—	—	—	—	—	601	—	—	—	—	—	—	—	—	—
91	—	—	—	—	—	—	—	—	—	241	—	—	—	—	—	—	—	—	—
236	—	—	—	—	—	—	—	—	—	565	—	—	—	—	—	—	—	—	—
258	—	—	—	—	—	—	—	—	—	539	—	—	—	—	—	—	—	—	—
136	—	—	—	—	—	—	—	—	—	17	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	797	—	—	—	—	—	—	—	—	—
397	—	—	—	—	—	—	—	—	—	675	—	—	—	—	—	—	—	—	—
306	—	—	—	—	—	—	—	—	—	16	—	—	—	—	—	—	—	—	—
78	—	—	—	—	—	—	—	—	—	177	—	—	—	—	—	—	—	—	—
19	—	—	—	—	—	—	—	—	—	54	—	—	—	—	—	—	—	—	—
15	—	—	—	—	—	—	—	—	—	31	—	—	—	—	—	—	—	—	—
20	—	—	—	—	—	—	—	—	—	62	—	—	—	—	—	—	—	—	—
9	—	—	—	—	—	—	—	—	—	31	—	—	—	—	—	—	—	—	—
18	—	—	—	—	—	—	—	—	—	51	—	—	—	—	—	—	—	—	—
23	—	—	—	—	—	—	—	—	—	44	—	—	—	—	—	—	—	—	—
73	—	—	—	—	—	—	—	—	—	177	—	—	—	—	—	—	—	—	—
22	—	—	—	—	—	—	—	—	—	47	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	210	—	—	—	—	—	—	—	—	—
94	—	—	—	—	—	—	—	—	—	63	—	—	—	—	—	—	—	—	—
24	—	—	—	—	—	—	—	—	—	60	—	—	—	—	—	—	—	—	—
23	—	—	—	—	—	—	—	—	—	380	—	—	—	—	—	—	—	—	—
217	—	—	—	—	—	—	—	—	—	121	—	—	—	—	—	—	—	—	—
50	—	—	—	—	—	—	—	—	—	163	—	—	—	—	—	—	—	—	—
397	—	—	—	—	—	—	—	—	—	451	—	—	—	—	—	—	—	—	—
191	—	—	—	—	—	—	—	—	—	763	—	—	—	—	—	—	—	—	—
4,070	132	176	289	373	718	1,040	553	789	438	9,406	763	694	793	892	1,416	2,079	1,111	1,658	5385
267,633	30,111	33,258	54,930	51,207	49,242	34,383	9,918	4,584	850,320	230,247	151,122	150,072	117,651	101,781	69,534	20,631	9,282	1,203	121
—	177	150	132	114	126	118	112	127	—	—	134	130	132	119	120	116	108	131	—

All Causes—ages 20-65 years.

Comparative Mortality Figure (Standardized Death-rate)

Deaths actually recorded per 100 which would have occurred at the

rates for all Occupied and Retired Civilian Males

All Causes—ages 20-65 years.

Comparative Mortality Figure (Standardized Death-rate)

Deaths actually recorded per 100 which would have occurred at the

rates for all Occupied and Retired Civilian Males

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

[illegible]

OCCUPATIONAL GROUP 12.—IRON ORE MINE—UNDERGROUND WORKERS, NOT SUPERINTENDING STAFF (054 part).*												OCCUPATIONAL GROUP 13.—TIN AND COPPER MINERS, NOT SUPERINTENDING STAFF (054 part, 056 part).†																							
Mean Annual Death-rate per 100,000.												Mean Annual Death-rate per 100,000.																							
Numbers of Deaths at Ages—												Numbers of Deaths at Ages—																							
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.																										
30	1	3	5	6	4	5	1	5	Influenza ..	..	..	..	..	..	..	..	..	..	4	—	—	—	—	—	—	—	—	—	—
47	2	1	14	9	13	4	2	2	Respiratory tuberculosis ..	..	..	..	..	..	..	..	..	..	102	—	1	16	27	1	—	—	—	—	—
8	—	—	—	—	—	—	—	—	Other tuberculosis ..	..	..	..	..	..	..	..	..	..	3	—	2	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	Syphilis, etc. ..	..	..	..	..	..	..	..	..	..	1	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	Syphilis ..	..	..	..	..	..	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Tabes dorsalis ..	..	..	..	..	..	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	General paralysis of insane ..	..	..	..	..	..	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	Aneurysm ..	..	..	..	..	..	..	..	..	..	1	—	—	—	—	—	—	—	—	—	—
61	—	—	—	—	—	—	—	—	Cancer, all sites ..	..	..	..	..	..	..	..	..	..	21	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	Skin ..	..	..	..	..	..	..	..	..	..	1	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	Lip ..	..	..	..	..	..	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	Tongue ..	..	..	..	..	..	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	Esophagus ..	..	..	..	..	..	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—
13	—	—	—	—	—	—	—	—	Stomach ..	..	..	..	..	..	..	..	..	..	7	—	—	—	—	—	—	—	—	—	—
41	—	—	—	—	—	—	—	—	Other sites ..	..	..	..	..	..	..	..	..	..	13	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..	..	..	..	..	..	..	..	..	..	2	—	—	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—	Diabetes ..	..	..	..	..	..	..	..	..	..	4	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Alcoholism ..	..	..	..	..	..	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—
46	—	—	—	—	—	—	—	—	Cerebral hemorrhage, etc. ..	..	..	..	..	..	..	..	..	..	20	—	—	—	—	—	—	—	—	—	—
12	—	—	—	—	—	—	—	—	Other dis. of the nervous system ..	..	..	..	..	..	..	..	..	..	10	—	—	—	—	—	—	—	—	—	—
40	—	—	—	—	—	—	—	—	Valvular disease of heart ..	..	..	..	..	..	..	..	..	..	15	—	—	—	—	—	—	—	—	—	—
38	—	—	—	—	—	—	—	—	Other heart disease ..	..	..	..	..	..	..	..	..	..	25	—	—	—	—	—	—	—	—	—	—
30	—	—	—	—	—	—	—	—	Arterio-sclerosis ..	..	..	..	..	..	..	..	..	..	9	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	Other dis. of circulatory system ..	..	..	..	..	..	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—
70	—	—	—	—	—	—	—	—	Bronchitis ..	..	..	..	..	..	..	..	..	..	32	—	—	—	—	—	—	—	—	—	—
28	—	—	—	—	—	—	—	—	Pneumonia ..	..	..	..	..	..	..	..	..	..	6	—	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	Chronic interstitial pneumonia ..	..	..	..	..	..	..	..	..	..	28	—	—	—	—	—	—	—	—	—	—
16	—	—	—	—	—	—	—	—	Other dis. of respiratory system ..	..	..	..	..	..	..	..	..	..	7	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	Ulcer of stomach ..	..	..	..	..	..	..	..	..	..	1	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	Ulcer of duodenum ..	..	..	..	..	..	..	..	..	..	1	—	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	Appendicitis ..	..	..	..	..	..	..	..	..	..	1	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	Hernia ..	..	..	..	..	..	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	Intestinal obstruction ..	..	..	..	..	..	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—	Cirrhosis of liver ..	..	..	..	..	..	..	..	..	..	2	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	Other dis. of digestive system ..	..	..	..	..	..	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—
10	—	—	—	—	—	—	—	—	Acute nephritis ..	..	..	..	..	..	..	..	..	..	8	—	—	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—	Chronic nephritis ..	..	..	..	..	..	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—
10	—	—	—	—	—	—	—	—	Diseases of the prostate ..	..	..	..	..	..	..	..	..	..	1	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	Other genito-urinary diseases ..	..	..	..	..	..	..	..	..	..	1	—	—	—	—	—	—	—	—	—	—
45	—	—	—	—	—	—	—	—	Old age ..	..	..	..	..	..	..	..	..	..	18	—	—	—	—	—	—	—	—	—	—
10	—	—	—	—	—	—	—	—	Suicide ..	..	..	..	..	..	..	..	..	..	5	—	—	—	—	—	—	—	—	—	—
32	—	—	—	—	—	—	—	—	Accident ..	..	..	..	..	..	..	..	..	..	8	—	—	—	—	—	—	—	—	—	—
26	—	—	—	—	—	—	—	—	Other causes ..	..	..	..	..	..	..	..	..	..	5	—	—	—	—	—	—	—	—	—	—
600	6	18	45	54	72	88	75	242	All causes	340	1	3	26	48	62	82	33	85	273	1212	2703					
39,543	2,802	4,626	9,780	9,387	6,441	3,843	1,290	1,374	Years of life (Census population × 3)	9,339	1,065	1,098	2,145	1,776	1,548	1,026	387	294	9,339	1,065	1,098					
—	87	111	115	90	97	89	116	190	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	—	38	78	304	423	346	311	171	213	—	38	78					
All Causes—ages 20-65 years.												All Causes—ages 20-65 years.												All Causes—ages 20-65 years.											
Comparative Mortality Figure (Standardized Death-rate) ..												Comparative Mortality Figure (Standardized Death-rate) ..												Comparative Mortality Figure (Standardized Death-rate) ..											
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..												Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..												Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..											
954												954												954											
96												96												96											

* This group comprises the Underground Metaliferous Mine Workers, not Superintending Staff, employed in Coal Mines and in Iron Ore Mines

† This group comprises the Metaliferous Mine Workers, not Superintending Staff, employed in or about Tin and

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

13

OCCUPATIONAL GROUP 13a.—TIN AND COPPER MINE—UNDERGROUND WORKERS, NOT SUPERINTENDING STAFF (054 part).*										OCCUPATIONAL GROUP 14.—STONE MINERS AND QUARRIERS (072).†									
Numbers of Deaths at Ages—										Numbers of Deaths at Ages—									
16—	20—	25—	35—	45—	55—	65—	70 and upwards,	Mean Annual Death-rate per 100,000.		16—	20—	25—	35—	45—	55—	65—	70 and upwards,	Mean Annual Death-rate per 100,000.	
All Ages 16 and upwards,										All Ages 16 and upwards,									
2	96	1	1	1	1	1	1	1	1	42	109	109	109	109	109	109	109	109	109
Influenza	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Respiratory tuberculosis	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Other tuberculosis	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Syphilis, etc.	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Tuberculosis	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
General paralysis of insane	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Aneurysm	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Cancer, all sites	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Skin	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Lip	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Tongue	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Esophagus	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Stomach	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Other sites	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Chronic rheumatism, etc., Gout	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Diabetes	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Alcoholism	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Cerebral hemorrhage, etc.	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Other dis. of the nervous system	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Valvular disease of heart	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Other heart disease	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Arterio-sclerosis	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Other dis. of circulatory system	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Bronchitis	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Pneumonia	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Chronic interstitial pneumonia	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Other dis. of respiratory system	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Ulcer of stomach	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Ulcer of duodenum	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Appendicitis	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Hernia	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Intestinal obstruction	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Cirrhosis of liver	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Other dis. of digestive system	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Acute nephritis	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Chronic nephritis	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Diseases of the prostate	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Other genito-urinary diseases	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Old age	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Suicide	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Accident	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Other causes	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
All causes	538	966	1075	1075	1075	1075	1075	1075	1075	42	109	109	109	109	109	109	109	109	109
Years of life (Census population × 3)	186	207	597	987	1,251	1,674	816	612	6,330	186	207	597	987	1,251	1,674	816	612	6,330	6,330
Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	249	281	423	482	550	359	35	66	—	249	281	423	482	550	359	35	66	—	—
Comparative Mortality Figure (Standardized Death-rate)	4,395	..	..	..	..	..	..	..	..	4,395	..	..	..	..	..	..	..	..	..
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males	439	..	..	..	..	..	..	..	..	439	..	..	..	..	..	..	..	..	..

All Causes—ages 20-65 years.

Comparative Mortality Figure (Standardized Death-rate)

Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

All Causes—ages 20-65 years.

Comparative Mortality Figure (Standardized Death-rate)

Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

* This group comprises the Underground Metalliferous Mine Workers, not Superintending Staff, employed in Tin and Copper Mines (Ind. Code No. 042).
† For an analysis of the mortality of these workers in different parts of the country see pages 113 and 114.

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 15.—SLATE MINERS AND QUARRIERS (073).												OCCUPATIONAL GROUP 16.—CEMENT WORKERS, LIME BURNERS, ETC. (091-099 part).*																
Numbers of Deaths at Ages—												Numbers of Deaths at Ages—																
Mean Annual Death-rate per 100,000.												Mean Annual Death-rate per 100,000.																
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	CAUSE OF DEATH. For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.				All Ages 16 and upwards.				16—	20—	25—	35—	45—	55—	65—	70 and upwards.				
16	—	—	—	—	—	—	—	—	Influenza ..	7	—	—	—	—	—	—	—	—	Respiratory tuberculosis	1	—	—	—	—	—	—	—	—
51	—	—	—	—	—	—	—	—	Other tuberculosis	24	—	—	—	—	—	—	—	—	Syphilis, etc.	1	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	Syphilis ..	3	—	—	—	—	—	—	—	—	Other causes	1	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	Other causes	2	—	—	—	—	—	—	—	—	Other causes	2	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	Other causes	1	—	—	—	—	—	—	—	—	Other causes	1	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—	—	—	—	—	Other causes	—	—	—	—	—				

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

[illegible]

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

[illegible]

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

[illegible]

OCCUPATIONAL GROUP 24.—OTHER SKILLED GLASS WORKERS (126, 127, 138).

Mean Annual Death-rate per 100,000									
Numbers of Deaths at Ages—									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	
13	—	1	2	1	4	4	1	—	3
66	5	8	11	16	15	8	—	—	—
4	1	—	2	1	4	—	1	—	—
7	—	—	—	2	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—
49	1	—	—	3	11	16	8	11	1
1	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
29	—	—	—	—	—	—	—	—	—
10	—	1	2	1	3	9	4	12	1
17	—	3	—	2	2	4	4	2	—
31	—	—	1	2	3	4	8	13	—
18	—	—	—	—	3	3	4	8	—
1	—	—	—	—	—	—	—	—	—
43	—	—	—	2	9	10	6	16	—
—	—	—	—	—	—	—	—	—	—
35	—	4	4	4	5	10	2	6	—
1	—	—	—	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—
13	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—
24	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—
10	—	—	—	—	—	—	—	—	—
18	—	—	—	—	—	—	—	—	—
430	8	21	30	44	69	92	52	114	—

28,287	4,458	4,230	6,258	5,049	4,586	2,250	675	771	Years of life (Census population × 3) in
—	72	141	120	136	130	159	154	109	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.

All Causes—ages 20-65 years.
Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males 1,417

CAUSE OF DEATH.

For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.

Influenza .. .. .	..	..	..	..	..	..	..	..	..
Respiratory tuberculosis ..	..	..	..	..	..	..	..	..	..
Other tuberculosis .. .. .	..	..	..	..	..	..	..	..	..
Syphilis, etc. .. .. .	..	..	..	..	..	..	..	..	..
Syphilis .. .. .	..	..	..	..	..	..	..	..	..
Tabes dorsalis .. .. .	..	..	..	..	..	..	..	..	..
General paralysis of insane ..	..	..	..	..	..	..	..	..	..
Aneurysm .. .. .	..	..	..	..	..	..	..	..	..
Cancer, all sites .. .. .	..	..	..	..	..	..	..	..	..
Skin .. .. .	..	..	..	..	..	..	..	..	..
Lip .. .. .	..	..	..	..	..	..	..	..	..
Tongue .. .. .	..	..	..	..	..	..	..	..	..
Esophagus .. .. .	..	..	..	..	..	..	..	..	..
Stomach .. .. .	..	..	..	..	..	..	..	..	..
Other sites .. .. .	..	..	..	..	..	..	..	..	..
Chronic rheumatism, etc., Gout ..	..	..	..	..	..	..	..	..	..
Diabetes .. .. .	..	..	..	..	..	..	..	..	..
Alcoholism .. .. .	..	..	..	..	..	..	..	..	..
Cerebral hemorrhage, etc. ..	..	..	..	..	..	..	..	..	..
Other dis. of the nervous system ..	..	..	..	..	..	..	..	..	..
Valvular disease of heart .. ..	..	..	..	..	..	..	..	..	..
Other heart disease .. .. .	..	..	..	..	..	..	..	..	..
Arterio-sclerosis .. .. .	..	..	..	..	..	..	..	..	..
Other dis. of circulatory system ..	..	..	..	..	..	..	..	..	..
Bronchitis .. .. .	..	..	..	..	..	..	..	..	..
Pneumonia .. .. .	..	..	..	..	..	..	..	..	..
Chronic interstitial pneumonia ..	..	..	..	..	..	..	..	..	..
Other dis. of respiratory system ..	..	..	..	..	..	..	..	..	..
Ulcer of stomach .. .. .	..	..	..	..	..	..	..	..	..
Ulcer of duodenum .. .. .	..	..	..	..	..	..	..	..	..
Appendicitis .. .. .	..	..	..	..	..	..	..	..	..
Hernia .. .. .	..	..	..	..	..	..	..	..	..
Intestinal obstruction .. .. .	..	..	..	..	..	..	..	..	..
Cirrhosis of liver .. .. .	..	..	..	..	..	..	..	..	..
Other dis. of digestive system ..	..	..	..	..	..	..	..	..	..
Acute nephritis .. .. .	..	..	..	..	..	..	..	..	..
Chronic nephritis .. .. .	..	..	..	..	..	..	..	..	..
Diseases of the prostate .. ..	..	..	..	..	..	..	..	..	..
Other genito-urinary diseases ..	..	..	..	..	..	..	..	..	..
Old age .. .. .	..	..	..	..	..	..	..	..	..
Suicide .. .. .	..	..	..	..	..	..	..	..	..
Accident .. .. .	..	..	..	..	..	..	..	..	..
Other causes .. .. .	..	..	..	..	..	..	..	..	..
All causes .. .. .	..	..	..	..	..	..	..	..	..

5,934	8,802	21,759	24,135	20,541	10,953	2,754	1,953	1,953	Comparative Mortality Figure (Standardized Death-rate)
27	113	83	96	84	85	96	73	73	Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

All Causes—ages 20-65 years.
Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males 878

OCCUPATIONAL GROUP 25.—CHEMICAL WORKERS (141-149).

Mean Annual Death-rate per 100,000									
Numbers of Deaths at Ages—									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	
43	1	1	5	10	10	8	3	5	17
99	—	13	20	27	20	16	—	—	148
8	—	1	2	4	4	1	—	—	92
18	—	—	1	6	5	5	—	—	112
3	—	—	—	—	—	—	—	—	9
2	—	—	—	—	—	—	—	—	11
8	—	—	—	—	—	—	—	—	23
5	—	—	—	—	—	—	—	—	92
147	—	1	2	12	41	69	10	12	148
7	—	—	—	1	3	3	—	—	9
1	—	—	—	—	—	—	—	—	11
—	—	—	—	—	—	—	—	—	23
1	—	—	—	—	—	—	—	—	92
8	—	—	—	—	—	—	—	—	11
11	—	—	—	—	—	—	—	—	23
26	—	—	—	—	—	—	—	—	92
94	—	—	—	—	—	—	—	—	11
—	—	—	—	—	—	—	—	—	23
1	—	—	—	—	—	—	—	—	92
12	—	—	—	—	—	—	—	—	11
63	—	—	—	—	—	—	—	—	23
14	—	—	—	—	—	—	—	—	92
—	—	—	—	—	—	—	—	—	11
68	—	—	—	—	—	—	—	—	23
78	—	—	—	—	—	—	—	—	92
34	—	—	—	—	—	—	—	—	11
2	—	—	—	—	—	—	—	—	23
110	—	—	—	—	—	—	—	—	92
84	—	—	—	—	—	—	—	—	11
—	—	—	—	—	—	—	—	—	23
6	—	—	—	—	—	—	—	—	92
7	—	—	—	—	—	—	—	—	11
2	—	—	—	—	—	—	—	—	23
10	—	—	—	—	—	—	—	—	92
1	—	—	—	—	—	—	—	—	11
5	—	—	—	—	—	—	—	—	23
6	—	—	—	—	—	—	—	—	92
18	—	—	—	—	—	—	—	—	11
—	—	—	—	—	—	—	—	—	23
3	—	—	—	—	—	—	—	—	92
32	—	—	—	—	—	—	—	—	11
7	—	—	—	—	—	—	—	—	23
5	—	—	—	—	—	—	—	—	92
24	—	—	—	—	—	—	—	—	11
13	—	—	—	—	—	—	—	—	23
4	—	—	—	—	—	—	—	—	92
1	—	—	—	—	—	—	—	—	11
7	—	—	—	—	—	—	—	—	23
10	—	—	—	—	—	—	—	—	92
18	—	—	—	—	—	—	—	—	11
430	8	21	30	44	69	92	52	114	17

28,287	4,458	4,230	6,258	5,049	4,586	2,250	675	771	Mean Annual Death-rate per 100,000
—	72	141	120	136	130	159	154	109	Numbers of Deaths at Ages—

All Causes—ages 20-65 years.
Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males 878

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

[illegible]

OCCUPATIONAL GROUP 28.—METAL MOULDERS (180).

[illegible]

All Causes—ages 20-65 years.				All Causes—ages 20-65 years.									
Figure (Standardized Death-rate)				Comparative Mortality Figure (Standardized Death-rate)									
per 100 which would have occurred at the				Deaths actually recorded per 100 which would have occurred at the									
and Retired Civilian Males				rates for all Occupied and Retired Civilian Males									
2,853	2,739	3,225	1,104	1,029	Years of life (Census population × 3)	226,638	32,865	30,081	56,766	47,136	32,847	17,157	4,953
97	74	153	171	174	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	—	115	95	102	109	109	125	129

All Causes—ages 20-65 years.
Comparative Mortality Figure (Standardized Death-rates)
Deaths actually recorded per 100 which would have occurred
rates for all Occupied and Retired Civilian Males . . .

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

[illegible]

OCCUPATIONAL GROUP 32.—MACHINE TOOL WORKERS AND METAL SPINNERS (200, 247)

Mean Annual Death-rate per 100,000.											
Numbers of Deaths at Ages—											
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.		
									16—	20—	70 and up.
CAUSE OF DEATH.											
For the precise significance of each item and its relation to the International List of Causes of Death, see page 1.											
Influenza ..	122	5	7	20	16	26	18	14	18	20	341
Respiratory tuberculosis ..	657	57	125	170	160	94	39	7	46	166	193
Other tuberculosis ..	56	15	15	7	13	3	1	1	1	1	106
Syphilis, etc. ..	59	—	—	—	18	19	18	2	5	4	21
Syphilis ..	7	—	—	—	3	3	1	—	5	5	21
Tabes dorsalis ..	16	—	—	—	4	4	7	—	7	26	—
General paralysis of insane ..	23	—	—	—	10	8	4	—	12	15	21
Aneurysm ..	13	—	—	—	1	7	22	—	1	22	—
Cancer, all sites ..	426	—	4	14	26	98	150	54	13	32	1704
Skin ..	13	—	—	—	—	4	3	1	—	—	106
Lip ..	—	—	—	—	—	5	12	—	—	—	—
Tongue ..	25	—	—	—	—	1	7	—	—	—	—
Esophagus ..	23	—	—	—	2	4	7	—	—	—	—
Stomach ..	84	—	—	—	2	29	31	13	2	51	106
Other sites ..	281	—	4	12	17	56	97	29	5	11	1406
Chronic rheumatism, etc., Gout ..	14	—	—	—	1	2	6	2	—	—	64
Diabetes ..	36	1	—	—	—	6	7	2	—	—	149
Alcoholism ..	2	—	—	—	—	2	—	—	—	—	—
Cerebral hemorrhage, etc. ..	223	—	—	—	10	29	70	41	3	12	1491
Other dis. of the nervous system ..	122	7	7	20	18	19	24	9	9	18	383
Valvular disease of heart ..	217	5	6	24	32	35	57	24	22	39	724
Other heart disease ..	234	3	4	14	14	43	56	41	7	17	1257
Arteriosclerosis ..	134	—	—	1	2	9	31	25	5	2	1406
Other dis. of circulatory system ..	254	1	3	6	23	29	53	48	1	4	1938
Pneumonia ..	283	13	23	55	47	58	38	22	18	29	575
Chronic intestinal pneumonia ..	58	—	—	—	2	14	11	5	—	—	—
Other dis. of respiratory system ..	29	2	4	4	10	8	4	4	3	12	256
Ulcer of stomach ..	15	—	—	—	2	6	4	1	—	—	—
Ulcer of duodenum ..	37	10	6	5	3	8	5	—	13	7	—
Appendicitis ..	13	—	—	—	1	2	4	—	2	4	—
Hernia ..	15	2	—	—	3	2	4	—	3	2	—
Intestinal obstruction ..	13	—	—	—	1	1	4	—	—	—	—
Cirrhosis of liver ..	48	3	3	5	10	11	9	1	4	4	—
Other dis. of digestive system ..	13	—	—	—	—	—	—	—	—	—	—
Acute nephritis ..	115	—	—	—	1	2	2	2	—	—	—
Chronic nephritis ..	35	—	—	—	14	18	29	13	1	1	—
Diseases of the prostate ..	257	—	—	—	20	35	9	10	1	16	447
Other genito-urinary diseases ..	131	—	—	—	24	—	9	5	2	32	319
Old age ..	2667	—	—	—	12	7	8	10	—	—	213
Suicide ..	55	—	—	—	26	—	3	10	—	—	2620
Accident ..	246	—	—	—	41	—	21	5	—	—	43
Other causes ..	—	—	—	—	61	—	14	8	3	17	85
All causes ..	3,699	148	245	418	499	607	715	370	199	305	14846

OCCUPATIONAL GROUP 31.—SMITHS AND SKILLED FORGE WORKERS (190).

Mean Annual Death-rate per 100,000.											
Numbers of Deaths at Ages—											
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.		
									16—	20—	70 and up.
Influenza ..	187	3	7	13	28	20	42	27	18	17	257
Respiratory tuberculosis ..	460	26	51	97	96	90	80	13	85	124	156
Other tuberculosis ..	49	7	1	9	12	6	9	2	28	162	75
Syphilis, etc. ..	110	—	—	4	17	34	31	12	12	18	60
Syphilis ..	11	—	—	—	3	4	3	6	6	6	5
Tabes dorsalis ..	34	—	—	—	—	—	—	—	—	—	—
General paralysis of insane ..	38	—	—	—	—	—	—	—	—	—	—
Aneurysm ..	27	—	—	—	—	—	—	—	—	—	—
Cancer, all sites ..	856	2	2	4	29	148	273	161	16	17	33
Skin ..	34	—	—	—	—	—	—	—	—	—	—
Lip ..	8	—	—	—	—	—	—	—	—	—	—
Tongue ..	54	—	—	—	—	—	—	—	—	—	—
Esophagus ..	67	—	—	—	—	—	—	—	—	—	—
Stomach ..	188	—	—	—	—	—	—	—	—	—	—
Other sites ..	505	2	1	4	17	85	158	105	17	22	606
Chronic rheumatism, etc., Gout ..	27	—	—	—	—	—	—	—	—	—	—
Diabetes ..	59	—	—	—	—	—	—	—	—	—	—
Alcoholism ..	4	—	—	—	—	—	—	—	—	—	—
Cerebral hemorrhage, etc. ..	530	—	—	—	—	—	—	—	—	—	—
Other dis. of the nervous system ..	135	6	6	12	18	17	31	14	1	3	170
Valvular disease of heart ..	406	2	4	15	30	53	93	76	2	3	728
Other heart disease ..	476	1	2	12	15	40	89	89	5	16	439
Arteriosclerosis ..	409	—	—	—	—	—	—	—	—	—	—
Other dis. of circulatory system ..	14	—	—	—	—	—	—	—	—	—	—
Pneumonia ..	663	1	—	—	—	—	—	—	—	—	—
Chronic intestinal pneumonia ..	409	5	11	39	64	79	76	52	3	5	2065
Other dis. of respiratory system ..	88	—	—	—	—	—	—	—	—	—	—
Ulcer of stomach ..	31	—	—	—	—	—	—	—	—	—	—
Ulcer of duodenum ..	22	—	—	—	—	—	—	—	—	—	—
Appendicitis ..	22	—	—	—	—	—	—	—	—	—	—
Hernia ..	21	—	—	—	—	—	—	—	—	—	—
Intestinal obstruction ..	28	—	—	—	—	—	—	—	—	—	—
Cirrhosis of liver ..	30	—	—	—	—	—	—	—	—	—	—
Other dis. of digestive system ..	109	—	—	—	—	—	—	—	—	—	—
Acute nephritis ..	19	1	2	5	3	4	2	1	5	6	5
Chronic nephritis ..	188	1	4	7	15	18	53	28	10	19	340
Diseases of the prostate ..	72	—	—	—	—	—	—	—	—	—	—
Other genito-urinary diseases ..	48	—	—	—	—	—	—	—	—	—	—
Old age ..	521	—	—	—	—	—	—	—	—	—	—
Suicide ..	84	—	—	—	—	—	—	—	—	—	—
Accident ..	171	—	—	—	—	—	—	—	—	—	—
Other causes ..	230	6	9	20	21	34	59	27	—	—	—
All causes ..	6,479	75	130	282	453	743	1,316	916	204	335	14043

Years of life (Census population × 3) ..											
Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.											
443,499	74,271	80,250	111,132	81,711	56,784	27,411	7,245	4,695	—	81	87
—	—	—	—	—	—	—	—	—	—	—	—

All Causes—ages 20-65 years.											
Comparative Mortality Figure (Standardized Death-rate) ..											
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..											
951	951	951	951	951	951	951	951	951	951	951	951
—	—	—	—	—	—	—	—	—	—	—	—

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 33.—FITTERS, TOOL SETTERS, MILLWRIGHTS AND SIMILAR OCCUPATIONS (210-212, 229, 244, 245, 248, 265).												OCCUPATIONAL GROUP 34.—BOILER MAKERS AND PLATERS, AND THEIR LABOURERS (222, 223).											
Numbers of Deaths at Ages—												Numbers of Deaths at Ages—											
Mean Annual Death-rate per 100,000.												Mean Annual Death-rate per 100,000.											
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	CAUSE OF DEATH.				All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		
For the precise significance of each title and its relation to the International List of Causes of Death, see page I.																							
309	23	35	40	55	36	46	23	51	Influenza ..	..	..	57	2	1	9	9	10	13	9	3	10
1,510	125	325	435	308	197	80	22	18	Respiratory tuberculosis ..	..	..	254	22	40	70	48	44	21	3	3	6
143	30	38	23	28	15	3	3	13	Other tuberculosis ..	..	..	20	4	4	3	3	5	—	2	1	9
228	—	4	23	63	74	43	14	7	Syphilis, etc. ..	..	..	41	—	—	3	11	8	2	—	2	1
20	—	1	5	5	7	—	2	—	Tuberculosis ..	..	..	5	—	—	1	2	2	—	—	—	—
50	—	—	1	12	12	15	6	4	Tabes dorsalis ..	..	..	8	—	—	—	—	—	5	1	1	1
119	—	3	16	41	38	18	3	—	General paralysis of insane ..	..	..	20	—	—	2	7	1	5	6	—	—
39	—	—	1	5	17	10	3	—	Aneurysm ..	..	..	8	—	—	—	—	3	1	—	—	—
1,153	9	16	32	94	197	329	207	269	Cancer, all sites ..	..	..	247	—	2	4	7	45	86	43	60	60
33	—	1	2	4	1	9	5	11	Skin ..	..	..	7	—	—	1	—	1	1	1	3	3
7	—	—	—	—	2	2	—	3	Lip ..	..	..	4	—	—	—	—	—	1	—	—	—
44	—	—	—	3	9	16	7	9	Tongue ..	..	..	19	—	—	—	—	—	3	10	1	5
73	—	—	—	2	14	32	10	15	Esophagus ..	..	..	22	—	—	—	—	—	3	13	3	3
243	—	—	—	5	30	49	55	45	Stomach ..	..	..	53	—	—	—	2	12	16	10	13	13
753	9	15	25	55	122	215	140	172	Other sites ..	..	..	142	—	2	3	5	26	45	28	33	33
38	—	1	13	3	10	9	3	12	Chronic rheumatism, etc., Gout ..	..	..	5	—	—	—	—	—	2	—	—	—
116	7	12	13	20	17	17	21	13	Diabetes ..	..	..	17	—	1	—	—	1	4	8	3	—
4	—	—	—	1	3	1	—	—	Alcoholism ..	..	..	153	—	1	—	—	—	—	—	—	—
691	1	9	27	63	54	19	113	306	Cerebral hemorrhage, etc. ..	..	..	47	2	4	10	7	17	38	27	67	67
309	26	21	47	36	36	54	19	—	Other dis. of the nervous system ..	..	..	153	—	1	—	—	—	—	—	—	—
609	13	25	47	77	91	141	76	139	Valvular disease of heart ..	..	..	136	3	1	5	13	30	35	17	32	32
717	7	22	44	50	73	144	112	265	Other heart disease ..	..	..	147	—	1	7	6	17	36	25	55	55
408	—	—	2	4	18	86	87	211	Arterio-sclerosis ..	..	..	89	—	—	2	2	4	21	18	43	43
35	—	1	3	4	8	8	3	11	Other dis. of circulatory system ..	..	..	4	—	—	1	1	9	19	29	25	104
587	3	7	12	23	51	94	71	326	Bronchitis ..	..	..	188	—	1	1	1	9	19	29	25	104
654	41	49	114	129	104	91	49	77	Pneumonia ..	..	..	156	8	14	18	27	23	36	17	13	13
9	—	1	3	1	3	3	8	29	Chronic interstitial pneumonia ..	..	..	35	—	—	—	—	—	4	—	—	—
131	3	9	9	22	20	31	8	29	Other dis. of respiratory system ..	..	..	20	—	2	3	5	4	6	4	11	11
64	2	2	7	18	14	12	6	4	Ulcer of stomach ..	..	..	7	—	—	2	2	4	4	6	1	—
53	—	—	—	12	16	6	4	—	Ulcer of duodenum ..	..	..	7	—	—	1	2	4	—	—	—	—
100	28	15	14	16	9	7	6	5	Appendicitis ..	..	..	19	3	5	4	2	2	2	1	—	—
49	2	5	7	10	10	10	4	14	Hernia ..	..	..	5	—	—	—	1	1	3	—	—	—
52	5	7	—	10	8	1	4	14	Intestinal obstruction ..	..	..	11	1	1	1	1	1	4	—	—	—
62	—	—	—	8	15	20	11	20	Cirrhosis of liver ..	..	..	10	—	—	—	—	3	3	1	2	2
181	7	8	12	21	27	40	20	46	Other dis. of digestive system ..	..	..	41	1	1	2	6	6	12	4	9	9
42	2	3	2	8	7	8	5	7	Acute nephritis ..	..	..	10	1	1	1	1	3	3	1	3	3
312	8	10	26	26	64	70	49	59	Chronic nephritis ..	..	..	66	—	—	2	2	7	8	21	6	22
102	—	—	1	—	19	19	19	62	Diseases of the prostate ..	..	..	26	—	—	—	—	—	3	11	12	12
78	—	—	—	13	12	10	13	20	Other genito-urinary diseases ..	..	..	18	—	—	—	—	3	—	7	17	17
457	1	6	3	—	—	8	22	427	Old age ..	..	..	116	—	—	—	—	—	3	4	4	109
157	12	—	19	30	38	33	5	11	Suicide ..	..	..	37	—	1	3	8	12	8	4	4	1
505	72	74	102	70	75	48	19	45	Accident ..	..	..	87	7	6	14	11	17	17	30	60	70
399	40	31	63	56	63	72	27	47	Other causes ..	..	..	73	2	8	5	7	15	12	12	12	12
10,264	468	738	1,117	1,246	1,372	1,714	1,045	2,564	All causes ..	..	..	2,143	57	98	169	204	318	450	239	608	608
Years of life (Census population × 3) ..																							
Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.																							
All Causes—ages 20-65 years.																							
Comparative Mortality Figure (Standardized Death-rate)																							
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																							
Comparative Mortality Figure (Standardized Death-rate)																							
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																							

OCCUPATIONAL GROUP 35.—BRASS FINISHERS AND TURNERS (224).

OCCUPATIONAL GROUP 36.—COPPERSMITHS (227).

CAUSE OF DEATH.

For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.

Mean Annual Death-rate per 100,000.

Numbers of Deaths at Ages—

Mean Annual Death-rate per 100,000.										Numbers of Deaths at Ages—										All Ages 16 and upwards.		Mean Annual Death-rate per 100,000.	

All Causes—ages 20-65 years.
Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the
rates for all Occupied and Retired Civilian Males

Years of life (Census population × 3)
Ratio of Mortality to that of all Occupied and Retired Civilian Males
taken as 100.

40,533 6,828 5,430 8,712 7,476 3,921 6,045 1,191 930
— 89 136 107 167 109 113 137

40,533 6,828 5,430 8,712 7,476 3,921 6,045 1,191 930
— 89 136 107 167 109 113 137

40,533 6,828 5,430 8,712 7,476 3,921 6,045 1,191 930
— 89 136 107 167 109 113 137

All Causes—ages 20-65 years.
Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the
rates for all Occupied and Retired Civilian Males

Years of life (Census population × 3)
Ratio of Mortality to that of all Occupied and Retired Civilian Males
taken as 100.

40,533 6,828 5,430 8,712 7,476 3,921 6,045 1,191 930
— 89 136 107 167 109 113 137

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 37.—CUTLERS (228).										OCCUPATIONAL GROUP 38.—FILE CUTTERS (232).									
Numbers of Deaths at Ages—										Numbers of Deaths at Ages—									
16—	20—	25—	35—	45—	55—	65—	70 and upwards.	CAUSE OF DEATH.		16—	20—	25—	35—	45—	55—	65—	70 and upwards.		
Mean Annual Death-rate per 100,000.								Mean Annual Death-rate per 100,000.											
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	70 and upwards.			All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	70 and upwards.		
5	2	1	1	1	1	1	2	Influenza ..	5	1	1	1	1	1	1	1	2		
37	1	4	9	8	10	2	1	Respiratory tuberculosis ..	19	1	3	7	2	4	4	1	1		
2	—	—	—	—	—	—	—	Other tuberculosis ..	1	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	Syphilis, etc. ..	—	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	Syphilis, etc. ..	—	—	—	—	—	—	—	—	—		
1	—	—	—	—	—	—	—	Tabes dorsalis ..	—	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	General paralysis of insane ..	—	—	—	—	—	—	—	—	—		
31	1	—	—	—	—	—	—	Aneurysm ..	18	—	—	1	2	—	—	7	—		
1	—	—	—	—	—	—	—	Cancer, all sites ..	1	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	Skin ..	—	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	Lip ..	—	—	—	—	—	—	—	—	—		
2	—	—	—	—	—	—	—	Tongue ..	—	—	—	—	—	—	—	—	—		
5	—	—	—	—	—	—	—	Esophagus ..	2	—	—	—	—	—	—	—	—		
6	—	—	—	—	—	—	—	Stomach ..	2	—	—	—	—	—	—	—	—		
17	—	—	—	—	—	—	—	Other sites ..	13	—	—	1	2	—	—	6	—		
—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..	1	—	—	—	—	—	—	—	—		
2	—	—	—	—	—	—	—	Diabetes ..	1	—	—	—	—	—	—	—	—		
1	—	—	—	—	—	—	—	Alcoholism ..	—	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	Cerebral hemorrhage, etc. ..	12	—	—	—	—	—	—	—	—		
26	—	—	—	—	—	—	—	Other dis. of the nervous system ..	3	—	—	—	—	—	—	—	—		
3	—	—	—	—	—	—	—	Valvular disease of heart ..	6	—	—	—	—	—	—	—	—		
16	—	—	—	—	—	—	—	Other heart disease ..	12	—	—	—	—	—	—	—	—		
21	—	—	—	—	—	—	—	Arterio-sclerosis ..	13	—	—	—	—	—	—	—	—		
23	—	—	—	—	—	—	—	Other dis. of circulatory system ..	23	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	Bronchitis ..	—	—	—	—	—	—	—	—	—		
20	—	—	—	—	—	—	—	Pneumonia ..	7	—	—	—	—	—	—	—	—		
1	—	—	—	—	—	—	—	Chronic interstitial pneumonia ..	—	—	—	—	—	—	—	—	—		
4	—	—	—	—	—	—	—	Other dis. of respiratory system ..	2	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	Ulcer of stomach ..	2	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	Ulcer of duodenum ..	—	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	Appendicitis ..	1	—	—	—	—	—	—	—	—		
1	—	—	—	—	—	—	—	Hernia ..	—	—	—	—	—	—	—	—	—		
2	—	—	—	—	—	—	—	Intestinal obstruction ..	—	—	—	—	—	—	—	—	—		
1	—	—	—	—	—	—	—	Cirrhosis of liver ..	1	—	—	—	—	—	—	—	—		
3	—	—	—	—	—	—	—	Other dis. of digestive system ..	—	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	Acute nephritis ..	3	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	Chronic nephritis ..	13	—	—	—	—	—	—	—	—		
6	—	—	—	—	—	—	—	Diseases of the prostate ..	2	—	—	—	—	—	—	—	—		
11	—	—	—	—	—	—	—	Other genito-urinary diseases ..	—	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	Old age ..	—	—	—	—	—	—	—	—	—		
4	—	—	—	—	—	—	—	Suicide ..	2	—	—	—	—	—	—	—	—		
7	—	—	—	—	—	—	—	Accident ..	1	—	—	—	—	—	—	—	—		
9	—	—	—	—	—	—	—	Other causes ..	3	—	—	—	—	—	—	—	—		
268	2	4	8	20	39	51	47	All causes ..	154	—	2	7	16	21	34	26	48		
11,829	1,293	1,071	1,989	1,848	2,433	1,740	741	Years of life (Census population × 3) ..	5,376	579	549	939	1,041	957	789	255	267		
—	63	106	101	169	139	114	127	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	—	—	103	187	241	190	168	204	132		
Comparative Mortality Figure (Standardized Death-rate) ..										Comparative Mortality Figure (Standardized Death-rate) ..									
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..										Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..									
All Causes—ages 20–65 years.										All Causes—ages 20–65 years.									
1,284										1,851									

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

[illegible]

OCCUPATIONAL GROUP 43.....RIVETERS AND THEIR LABOURERS (255, 256).

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.						
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.							
									16—	20—	25—	35—	45—	55—	65—	70 and up.
27	3	1	9	2	5	4	—	3	16	7	44	12	43	64	—	505
139	18	23	28	36	22	10	—	—	98	167	138	218	188	160	158	—
83	1	1	1	2	3	—	—	—	5	7	5	12	26	—	—	—
28	—	1	1	7	4	10	—	—	—	7	5	42	34	160	—	—
4	—	1	1	—	1	1	—	—	—	7	5	—	—	16	—	—
3	—	—	—	—	—	3	—	—	—	—	—	—	—	—	—	—
10	—	—	—	7	2	1	—	—	—	—	—	42	17	48	—	—
6	—	—	—	15	1	5	17	15	5	—	10	91	137	399	1343	2525
91	1	—	2	—	16	25	1	—	—	—	—	—	—	79	—	—
1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	168
2	—	—	—	—	1	1	—	—	—	—	—	—	9	16	—	—
23	—	—	—	5	2	3	3	1	—	—	—	6	17	48	237	1010
57	1	—	2	9	11	14	13	7	5	—	10	54	94	223	1027	1178
4	—	—	—	—	—	—	1	2	—	—	—	—	—	—	—	—
5	—	—	1	—	2	—	1	—	—	—	5	—	—	17	16	79
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
53	7	—	2	7	5	19	12	16	—	—	5	—	43	303	948	2684
26	—	—	—	—	3	3	—	1	38	15	10	42	34	48	—	168
52	3	—	5	7	9	10	6	12	16	—	25	42	77	160	474	2020
32	2	2	3	5	7	14	5	10	11	15	15	30	60	223	385	1684
—	—	—	—	—	3	8	4	17	—	—	—	26	128	316	2862	—
78	—	—	4	5	11	18	12	28	—	—	—	—	94	287	948	4714
87	8	9	13	19	17	9	7	5	43	65	64	115	145	144	553	842
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6	—	1	—	2	—	1	—	2	—	7	—	12	—	16	—	337
3	—	—	1	1	2	—	—	—	—	—	—	6	17	—	—	—
4	1	—	1	1	—	2	—	—	5	—	—	—	32	—	—	—
9	4	1	2	—	1	1	—	—	22	7	10	—	9	16	—	168
1	—	—	—	—	1	—	—	1	—	—	—	—	—	—	—	—
2	—	—	—	—	2	—	—	—	—	—	—	—	9	16	—	—
14	—	1	1	4	1	3	1	3	—	7	5	24	9	48	79	505
23	—	—	—	—	—	—	—	—	—	—	—	6	—	—	—	—
23	1	1	4	4	3	3	1	6	5	7	20	24	26	48	237	1010
7	—	—	—	—	—	2	3	2	—	—	—	—	32	73	337	—
7	—	—	—	1	3	1	1	2	—	—	—	6	26	16	—	337
35	—	—	—	—	—	1	1	33	—	—	—	—	—	16	79	5556
6	—	—	1	—	2	2	1	—	—	—	5	—	—	—	—	—
51	13	9	8	5	8	7	1	—	—	71	65	40	30	51	112	79
39	5	5	4	4	6	4	5	4	—	—	—	—	—	—	—	—
884	67	57	90	128	138	160	80	164	364	414	444	774	1178	2554	6319	27609

OCCUPATIONAL GROUP 42.—PLUMBERS (252).

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.										For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.
All Ages 16 and upwards.	16—20—25—35—45—55—65—70 and upwards.					16—20—25—35—45—55—65—70 and up.														
	16	20	25	35	45	55	65	70 and upwards.	16	20		25	35	45	55	65	70 and up.			
50	4	3	8	7	5	9	5	9	21	20	25	21	21	66	135	294	Influenza ..			
161	12	16	35	41	38	—	16	—	62	107	108	124	163	118	81	—	Respiratory tuberculosis			
26	9	2	4	5	2	—	3	—	47	13	12	15	9	15	—	—	Other tuberculosis			
24	—	—	2	8	8	—	3	—	—	—	6	24	34	22	81	—	Syphilis, etc.			
1	—	—	—	—	—	—	1	—	—	—	—	—	—	7	—	—	Syphilis			
3	—	—	2	—	—	—	—	—	—	—	6	—	—	—	—	—	Tubercularis ..			
13	—	—	—	4	5	—	1	—	—	—	—	12	21	7	54	—	General paralysis of insane			
9	—	—	—	4	3	—	53	1	5	7	—	12	13	7	33	—	Aneurysm ..			
174	1	1	3	10	37	—	2	39	—	—	9	30	158	390	811	1272	Cancer, all sites ..			
2	—	—	—	—	—	—	—	—	—	—	—	—	—	15	—	—	Skin ..			
2	—	—	—	—	—	—	—	—	—	—	—	—	—	7	—	—	Lip ..			
14	—	—	—	—	—	—	1	2	—	—	—	—	—	13	51	33	Tongue ..			
17	—	—	—	—	—	—	6	5	—	—	—	—	—	17	44	65	Glossopharynx ..			
33	—	—	—	—	—	—	6	2	—	—	—	—	—	3	44	189	Stomach ..			
33	—	—	—	—	—	—	3	11	—	—	—	—	—	34	44	358	Other sites ..			
106	1	1	3	9	22	—	31	23	5	7	9	27	94	228	433	750	Chronic rheumatism, etc., Gout			
19	—	—	—	1	6	—	—	3	—	—	—	3	26	37	108	98	Diabetes ..			
14	2	—	3	2	2	—	3	1	10	—	9	6	9	22	27	33	Alcoholism ..			
137	—	—	1	4	19	—	37	46	—	—	3	12	81	272	811	1500	Cerebral hemorrhage, etc.			
43	—	1	6	7	5	—	13	8	—	7	19	21	21	96	81	281	Other dis. of the nervous system			
95	—	—	10	7	12	—	25	26	—	7	31	21	51	184	378	848	Valvular disease of heart			
84	2	2	3	9	10	—	21	29	10	13	9	27	43	154	216	946	Other heart disease			
75	—	—	3	4	9	—	12	35	—	—	9	12	39	88	324	1142	Arterio-sclerosis ..			
4	—	—	—	—	—	—	—	1	—	—	—	—	4	—	—	—	Other dis. of circulatory system			
97	—	—	—	3	7	—	15	22	—	—	9	9	30	110	595	1533	Bronchitis ..			
104	5	3	13	17	17	—	24	17	26	20	40	51	73	176	216	554	Pneumonia ..			
25	1	1	—	1	6	—	3	—	5	7	—	6	26	22	162	196	Chronic interstitial pneumonia			
14	—	—	—	2	5	—	4	6	—	—	—	9	21	29	68	—	Other dis. of respiratory system			
25	—	—	—	2	4	—	1	—	—	7	—	6	17	7	27	—	Ulcer of stomach			
10	3	3	2	—	2	—	—	—	16	20	6	—	9	—	—	—	Ulcer of duodenum			
8	—	1	1	—	1	—	1	2	5	7	3	—	4	7	—	—	Appendicitis ..			
6	—	—	1	—	1	—	3	—	—	—	—	—	4	22	—	65	Hernia ..			
25	1	2	3	3	2	—	4	1	—	—	9	3	9	29	27	33	Intestinal obstruction			
7	—	—	—	—	—	—	—	—	5	13	9	9	34	22	81	65	Curiousness of liver ..			
88	—	—	1	2	1	—	2	—	5	—	3	6	4	15	—	—	Other dis. of digestive system			
13	—	—	4	7	16	—	36	10	7	12	21	21	68	265	270	—	Acute nephritis			
13	—	—	—	—	—	—	2	2	—	—	—	—	4	15	54	457	Chronic nephritis			
11	—	—	—	—	—	—	2	8	—	—	—	—	4	15	54	261	Diseases of the prostate			
57	—	—	—	—	—	—	—	3	—	—	—	3	9	29	27	98	Other genito-urinary diseases			
28	—	—	1	5	2	—	13	2	—	—	—	—	—	37	27	1663	Old age ..			
65	—	2	11	10	10	—	19	3	36	13	34	30	43	140	81	163	Suicide ..			
67	7	6	9	6	18	—	7	6	—	—	—	—	—	—	—	98	Accident ..			
1,547	56	46	126	168	257	345	183	366	291	308	391	508	1100	2538	4947	11937	Other causes ..			
																	All causes ..			

[illegible]

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

[illegible]

OCCUPATIONAL GROUP 46.—ELECTRICAL ENGINEERS, FITTERS AND WIREMEN (305-307, 311).

CAUSE OF DEATH.

For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.

Numbers of Deaths at Ages—								Mean Annual Death-rate per 100,000.								
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and up.
55	3	4	12	13	10	10	—	3	6	8	15	24	37	110	—	298
271	29	83	98	86	47	22	—	3	56	156	126	157	173	242	217	298
42	10	9	9	24	4	—	—	—	19	17	5	44	88	55	145	—
60	—	—	4	24	2	—	—	—	—	—	—	—	—	—	—	99
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	1	1	2	1	—	—	—	—	—	—	—	—	—	—
43	—	—	3	23	14	3	—	—	—	—	—	—	—	—	—	—
8	—	—	—	—	6	1	—	—	—	—	—	—	—	—	—	—
144	—	1	9	25	34	51	—	—	—	—	—	—	—	—	—	—
6	—	—	—	—	1	3	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
31	—	—	2	8	10	7	—	—	—	—	—	—	—	—	—	—
86	—	1	7	14	20	27	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
59	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
133	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
36	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
115	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1,696	122	176	272	354	313	269	79	111	238	331	351	646	1,151	2,959	5,725	11,012

275.985	51,837	53,172	77,511	54,804	27,183	9,090	1,380	1,008	Years of life (Census population × 3) ..
—	95	94	88	101	100	115	115	81	Ratio of Mortality to that of all Occupied taken as 100.

All Causes—ages 20-65 years.

Comparative Mortality Figure (Standardized Death-rate)	1,042
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..	99

All Causes—ages 20–65 years.

Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the
rates for all Occupied and Retired Civilian Males

OCCUPATIONAL GROUP 47.—MAKERS OF WATCHES, CLOCKS, SCIENTIFIC AND ELECTRICAL INSTRUMENTS (309, 322-324).

[illegible]

All Causes—ages 20-65 years.									
Comparative Mortality Figure (Standardized Death-rate)									
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males									
	10,719	10,989	17,553	12,420	10,014	7,677	2,712		
75,393									3,309
—	102	93	109	74	67	83	71		79

All Causes—ages 20–65 years

Comparative Mortality Figure (Standardized Death-rate)	..	804
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males	..	82

OCCUPATIONAL GROUP 52.—RAG GRINDERS; WOOL WILLOWERS, ETC. (351, part; 362, part).*													OCCUPATIONAL GROUP 53.—COTTON CARD AND FRAME (NOT SPINNING FRAME) TENTERS (Occ. 353, 363, Ind. 260-9).																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
CAUSE OF DEATH.													Numbers of Deaths at Ages—																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.													Mean Annual Death-rate per 100,000.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
Influenza	9	1	1	1	3	2	1	2	9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

All Causes—ages 20-65 years.

Comparative Mortality Figure (Standardized Death-rate)

Deaths actually recorded per 100 which would have occurred at the

rates for all Occupied and Retired Civilian Males

This group comprises Rag Grinders, Hecklers and Willowers and their Overlookers employed in the manufacture of Woollens, Worsteds, Munro, Shoddy and Felt (Ind. Code No. 270-5).

OCCUPATIONAL GROUP 54.—WOOL AND WORSTED CARD, COMB, OR FRAME (NOT SPINNING FRAME) TENTERS (Occ. 353, 363, Ind. 270-5).										OCCUPATIONAL GROUP 55.—COTTON STRIPPERS AND GRINDERS AND CARD ROOM JOBBERS (Occ. 364, Ind. 260-9).									
Numbers of Deaths at Ages—										Numbers of Deaths at Ages—									
Mean Annual Death-rate per 100,000.										Mean Annual Death-rate per 100,000.									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and up.	
10	—	—	—	—	—	—	—	—	Influenza ..	10	—	—	—	—	—	—	—	—	606
64	4	—	—	—	—	—	—	—	Respiratory tuberculosis ..	18	1	—	—	—	—	—	—	—	606
9	1	—	—	—	—	—	—	—	Other tuberculosis ..	1	—	—	—	—	—	—	—	—	606
4	—	—	—	—	—	—	—	—	Syphilis ..	3	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	Syphilis ..	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Tabes dorsalis ..	1	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	General paralysis of insane ..	1	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Aneurysm ..	1	—	—	—	—	—	—	—	—	—
58	—	—	—	—	—	—	—	—	Cancer, all sites ..	18	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	Skin ..	1	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Lip ..	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Tongue ..	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Gastroplagus ..	2	—	—	—	—	—	—	—	—	—
17	—	—	—	—	—	—	—	—	Stomach ..	3	—	—	—	—	—	—	—	—	—
29	—	—	—	—	—	—	—	—	Other sites ..	12	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..	—	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	Diabetes ..	1	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	Alcoholism ..	3	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Cerebral hemorrhage, etc. ..	—	—	—	—	—	—	—	—	—	—
41	—	—	—	—	—	—	—	—	Other dis. of the nervous system ..	12	—	—	—	—	—	—	—	—	—
12	—	—	—	—	—	—	—	—	Valvular disease of heart ..	—	—	—	—	—	—	—	—	—	—
33	—	—	—	—	—	—	—	—	Other heart disease ..	24	—	—	—	—	—	—	—	—	—
36	—	—	—	—	—	—	—	—	Arterio-sclerosis ..	1	—	—	—	—	—	—	—	—	—
38	—	—	—	—	—	—	—	—	Other dis. of circulatory system ..	17	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	Bronchitis ..	51	—	—	—	—	—	—	—	—	—
49	—	—	—	—	—	—	—	—	Pneumonia ..	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Chronic interstitial pneumonia ..	21	—	—	—	—	—	—	—	—	—
37	—	—	—	—	—	—	—	—	Other dis. of respiratory system ..	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	Ulcer of stomach ..	3	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Ulcer of duodenum ..	3	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Appendicitis ..	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	Hernia ..	—	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	Intestinal obstruction ..	2	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Cirrhosis of liver ..	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Other dis. of digestive system ..	4	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Acute nephritis ..	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	Chronic nephritis ..	3	—	—	—	—	—	—	—	—	—
19	—	—	—	—	—	—	—	—	Diseases of the prostate ..	13	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Other genito-urinary diseases ..	4	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Old age ..	9	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Suicide ..	2	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	Accident ..	8	—	—	—	—	—	—	—	—	—
18	—	—	—	—	—	—	—	—	Other causes ..	9	—	—	—	—	—	—	—	—	—
28	—	—	—	—	—	—	—	—	All causes ..	—	—	—	—	—	—	—	—	—	—
566	6	12	27	50	90	145	79	157	All causes ..	253	3	4	14	23	47	69	43	50	397
27,624	2,190	3,201	4,881	5,289	5,571	4,188	1,329	975	Years of life (Census population × 3) ..	16,326	756	1,818	5,076	3,989	2,721	1,440	351	165	1,396
—	111	107	139	148	140	135	119	119	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	—	161	63	69	90	149	186	245	223	131
Comparative Mortality Figure (Standardized Death-rate) ..										Comparative Mortality Figure (Standardized Death-rate) ..									
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..										Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..									

OCCUPATIONAL GROUP 59.—WOOL AND WORSTED-DOUBLERS, WINDERS, WARPERS, BEAMERS, ETC. (Occ. 355, 366-8. Ind. 270-5).									
CAUSE OF DEATH.									
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.									
Mean Annual Death-rate per 100,000									
Numbers of Deaths at Ages—									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.
23	—	—	—	—	—	—	—	—	—
47	—	—	—	—	—	—	—	—	—
15	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—
65	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—
17	—	—	—	—	—	—	—	—	—
40	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—
48	—	—	—	—	—	—	—	—	—
19	—	—	—	—	—	—	—	—	—
45	—	—	—	—	—	—	—	—	—
48	—	—	—	—	—	—	—	—	—
19	—	—	—	—	—	—	—	—	—
53	—	—	—	—	—	—	—	—	—
45	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—
11	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—
15	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—
31	—	—	—	—	—	—	—	—	—
12	—	—	—	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—	—
30	—	—	—	—	—	—	—	—	—
580	8	21	40	56	97	135	85	138	138
36,762	2,709	4,677	9,351	7,617	6,708	4,014	1,071	615	615
—	119	128	107	115	125	131	159	165	165
All Causes—ages 20-65 years.									
Comparative Mortality Figure (Standardized Death-rate) 1,236									
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males 123									
Years of life (Census population × 3) 13,944									
Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.									
1,761	1,305	2,955	2,445	3,030	1,617	498	333	333	333
69	131	127	70	86	103	80	106	106	106
All Causes—ages 20-65 years.									
Comparative Mortality Figure (Standardized Death-rate) 970									
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males 95									

OCCUPATIONAL GROUP 60.—COTTON WEAVERS (Occ. 356, 370. Ind. 270-5).

CAUSE OF DEATH.										
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.										
Mean Annual Death-rate per 100,000.										
Numbers of Deaths at Ages—										
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		
Influenza	8	—	1	1	—	—	2	4	323	
Respiratory tuberculosis	39	8	4	14	9	—	2	2	161	102
Other tuberculosis ..	10	1	1	2	2	2	1	1	35	40
Syphilis, etc. .. .	3	—	—	—	1	—	—	—	16	17
Syphilis	—	—	—	—	—	—	—	—	43	20
Tabes dorsalis	3	—	—	—	1	—	—	1	—	—
General paralysis of insane	—	—	—	—	—	—	—	—	17	20
Aneurysm	92	1	—	1	6	—	31	20	105	617
Cancer, all sites .. .	3	—	—	—	—	—	—	33	1018	161
Skin	—	—	—	—	—	—	—	—	21	51
Lip	1	—	—	—	—	—	—	—	—	—
Tongue	3	—	—	—	—	—	—	—	—	—
Gonorrhoea	23	—	—	—	3	—	1	1	52	20
Stomach	62	1	—	1	3	—	6	5	119	254
Other sites	—	—	—	—	—	—	23	13	726	1695
Chronic rheumatism, etc., Gout	3	—	1	1	1	—	1	1	21	17
Diabetes	19	—	1	2	—	—	5	6	16	43
Alcoholism	64	—	—	—	2	—	—	—	35	219
Cerebral hemorrhage, etc.,	20	—	3	1	2	—	14	8	49	21
Other dis. of the nervous system	—	—	—	—	5	—	5	1	35	100
Valvular disease of heart	57	—	4	4	6	—	13	11	68	85
Other heart disease ..	70	—	2	—	19	—	19	19	35	378
Arterio-sclerosis .. .	66	—	—	—	2	—	15	16	967	2260
Other dis. of circulatory system	—	—	—	—	—	—	—	35	299	814
Bronchitis	51	—	—	1	3	—	8	11	52	159
Pneumonia	23	—	1	—	5	—	8	4	16	87
Chronic interstitial pneumonia	—	—	—	—	—	—	—	—	—	100
Other dis. of respiratory system	9	—	1	1	2	—	3	1	21	35
Ulcer of stomach .. .	6	—	—	—	1	—	3	1	17	60
Ulcer of duodenum ..	3	—	—	—	1	—	—	—	17	20
Appendicitis	5	2	1	1	—	—	1	1	21	—
Hernia	2	—	—	—	—	—	—	—	17	—
Intestinal obstruction ..	4	—	—	—	—	—	2	1	40	51
Cirrhosis of liver .. .	4	—	—	—	—	—	3	1	81	—
Other dis. of digestive system	20	—	—	1	4	—	4	7	70	80
Acute nephritis	1	—	—	—	1	—	—	—	21	565
Chronic nephritis .. .	26	—	3	—	1	—	—	—	17	—
Diseases of the prostate	11	—	—	—	3	—	9	4	52	179
Other genito-urinary diseases	9	—	—	—	—	—	2	1	40	51
Old age	47	—	—	—	—	—	3	4	17	60
Suicide	10	—	1	2	1	—	1	3	—	—
Accident	11	1	1	3	4	—	5	4	16	43
Other causes	23	—	—	—	—	—	—	—	—	—
All causes	716	3	11	22	35	60	155	290	202	428

CAUSE OF DEATH.

For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.

Influenza ..	324	209	84	43	22	22	22	22	22	22
Respiratory tuberculosis ..	39	10	1	—	—	—	—	—	—	—
Other tuberculosis ..	10	3	—	—	—	—	—	—	—	—
Syphilis, etc. ..	3	—	—	—	—	—	—	—	—	—
Syphilis ..	—	—	—	—	—	—	—	—	—	—
Tuberculosis ..	3	—	—	—	—	—	—	—	—	—
General paralysis of insane ..	—	—	—	—	—	—	—	—	—	—
Aneurysm ..	92	33	20	31	6	1	—	—	—	—
Cancer, all sites ..	3	—	—	—	—	—	—	—	—	—
Skin ..	—	—	—	—	—	—	—	—	—	—
Lip ..	—	—	—	—	—	—	—	—	—	—
Tongue ..	—	—	—	—	—	—	—	—	—	—
Esophagus ..	23	3	6	3	23	13	—	—	—	—
Stomach ..	62	—	—	—	—	—	—	—	—	—
Other sites ..	—	—	—	—	—	—	—	—	—	—
Chronic rheumatism, etc., Gout ..	130	104	130	130	130	130	130	130	130	130
Diabetes ..	19	—	—	—	—	—	—	—	—	—
Alcoholism ..	64	20	—	—	—	—	—	—	—	—
Cerebral hemorrhage, etc. ..	20	—	—	—	—	—	—	—	—	—
Other dis. of the nervous system ..	—	—	—	—	—	—	—	—	—	—
Valvular disease of heart ..	57	70	76	70	76	70	76	70	76	70
Other heart disease ..	66	—	—	—	—	—	—	—	—	—
Arterio-sclerosis ..	—	—	—	—	—	—	—	—	—	—
Other dis. of circulatory system ..	51	—	—	—	—	—	—	—	—	—
Bronchitis ..	23	—	—	—	—	—	—	—	—	—
Pneumonia ..	—	—	—	—	—	—	—	—	—	—
Chronic interstitial pneumonia ..	9	—	—	—	—	—	—	—	—	—
Other dis. of respiratory system ..	—	—	—	—	—	—	—	—	—	—
Ulcer of stomach ..	3	—	—	—	—	—	—	—	—	—
Ulcer of duodenum ..	5	—	—	—	—	—	—	—	—	—
Appendicitis ..	2	—	—	—	—	—	—	—	—	—
Hernia ..	14	12	21	22	22	22	22	22	22	22
Intestinal obstruction ..	4	—	—	—	—	—	—	—	—	—
Cirrhosis of liver ..	20	—	—	—	—	—	—	—	—	—
Other dis. of digestive system ..	20	—	—	—	—	—	—	—	—	—
Acute nephritis ..	1	—	—	—	—	—	—	—	—	—
Chronic nephritis ..	26	—	—	—	—	—	—	—	—	—
Diseases of the prostate ..	11	—	—	—	—	—	—	—	—	—
Other genito-urinary diseases ..	9	—	—	—	—	—	—	—	—	—
Old age ..	47	—	—	—	—	—	—	—	—	—
Suicide ..	10	—	—	—	—	—	—	—	—	—
Accident ..	11	—	—	—	—	—	—	—	—	—
Other causes ..	23	—	—	—	—	—	—	—	—	—
All causes ..	716	3	11	22	35	60	155	140	290	23406

All Causes—ages 20-65 years.

Comparative Mortality Figure (Standardized Death-rate)

Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

* For an analysis of the mortality of these workers in different parts of the country see page 115.

OCCUPATIONAL GROUP 62.—WEAVERS OF OTHER TEXTILES (356, part; 370, part).*

OCCUPATIONAL GROUP 63.—HOSIERY FRAME TENTERS AND MACHINE KNITTERS (374).

CAUSE OF DEATH.

For the precise significance of each title and its relation to the International List of Causes of Death, see page I.

Mean Annual Death-rate per 100,000.

Numbers of Deaths at Ages—

Mean Annual Death-rate per 100,000.

All Ages 16 and upwards.		16—		20—		25—		35—		45—		55—		65—		70 and upwards.		Causes of Death, see page 1.		Additional Information. List of	
9	1	5	65	94	176	140	28	28	1	1	1	1	1	1	2	5	Influenza ..	11	5	1	1
31	4	2	259	94	176	140	28	28	1	1	1	1	1	1	2	5	Respiratory tuberculosis ..	23	7	3	3
4	1	1	94	94	94	28	28	28	1	1	1	1	1	1	2	5	Other tuberculosis ..	7	1	1	1
1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Syphilis, etc. ..	3	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Tabes dorsalis ..	2	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	General paralysis of insane ..	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Aneurysm ..	1	—	—	—
54	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Cancer, all sites ..	33	3	1	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Skin ..	2	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Lip ..	—	—	—	—
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Tongue ..	2	—	—	—
1	1	1	175	—	—	—	—	—	—	—	—	—	—	—	—	—	Esophagus ..	3	3	3	3
9	9	—	87	—	—	—	—	—	—	—	—	—	—	—	—	—	Stomach ..	9	9	9	9
40	—	—	172	210	855	1309	—	—	—	—	—	—	—	—	—	—	Other sites ..	17	17	17	17
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..	2	2	2	2
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Diabetes ..	2	2	2	2
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Alcoholism ..	2	2	2	2
16	16	—	2443	—	—	—	—	—	—	—	—	—	—	—	—	—	Cerebral hemorrhage, etc. ..	36	36	36	36
—	—	—	74	270	466	78	—	—	—	—	—	—	—	—	—	—	Other dis. of the nervous system ..	10	10	10	10
—	—	—	436	—	—	—	—	—	—	—	—	—	—	—	—	—	Valvular disease of heart ..	18	18	18	18
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other heart disease ..	39	39	39	39
27	1	8	65	47	—	—	—	—	—	—	—	—	—	—	—	—	Arterio-sclerosis ..	15	15	15	15
49	—	28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other dis. of circulatory system ..	—	—	—	—
34	—	28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Bronchitis ..	42	42	42	42
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Pneumonia ..	—	—	—	—
55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Chronic interstitial pneumonia ..	14	14	14	14
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other dis. of respiratory system ..	—	—	—	—
27	—	11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Ulcer of stomach ..	2	2	2	2
1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Ulcer of duodenum ..	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Appendicitis ..	1	1	1	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Hernia ..	—	—	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Intestinal obstruction ..	2	2	2	2
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Cirrhosis of liver ..	4	4	4	4
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other dis. of digestive system ..	10	10	10	10
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Acute nephritis ..	1	1	1	1
2	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Chronic nephritis ..	14	14	14	14
17	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Diseases of the prostate ..	7	7	7	7
6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other genito-urinary diseases ..	3	3	3	3
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Old age ..	71	71	71	71
78	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Suicide ..	9	9	9	9
6	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Accident ..	5	5	5	5
9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other causes ..	12	12	12	12
16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	All causes ..	407	407	407	407
517	6	5	13	19	43	81	62	288	388	235	327	531	1059	2428	4817	25131	All causes ..	407	11	10	12

All Causes—ages 20-65 years.

Comparative Mortality Figure (Standardized Death-rate)

Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

929

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* Comprises Weavers and their Overlookers engaged in Textile manufactures other than Cotton, Woollen, or Worsted.

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 64.—DYE MIXERS AND DYERS (381).																OCCUPATIONAL GROUP 65.—SCOURERS (WOOLLEN, WORSTED, AND HOSIERY); CALENDERERS AND FINISHERS (384).																		
Mean Annual Death-rate per 100,000.																Mean Annual Death-rate per 100,000.																		
Numbers of Deaths at Ages—																Numbers of Deaths at Ages—																		
16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.											
41	6	9	5	10	20	13	2	6	103	123	157	86	78	40	162	96	395	Influenza ..	27	5	3	2	4	7	4	5	70							
110	1	3	2	24	1	25	4	—	17	41	21	157	186	16	312	192	—	Respiratory tuberculosis ..	97	59	124	115	155	135	94	288	and up.							
11	1	1	1	2	4	6	—	—	—	—	7	8	16	32	75	48	—	Other tuberculosis ..	10	24	10	14	28	12	—	288								
14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Syphilis ..	5	—	—	—	—	—	—	58								
3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Tabes dorsalis ..	1	—	—	—	—	—	—	58								
4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	General paralysis of insane ..	2	—	—	—	—	—	—	—	—							
3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Acute ..	2	—	—	—	—	—	—	—	—							
114	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Carbuncles, all sites ..	128	—	—	—	—	—	—	132	and up.							
4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Shin ..	5	—	—	—	—	—	—	188	—							
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Lip ..	1	—	—	—	—	—	—	58	—							
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Tongue ..	9	—	—	—	—	—	—	47	and up.							
6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Esophagus ..	5	—	—	—	—	—	—	37	—							
23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Stomach ..	32	—	—	—	—	—	—	41	—							
75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other sites ..	76	—	—	—	—	—	—	65	—							
11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..	7	—	—	—	—	—	—	31	—							
15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Diabetes ..	11	—	—	—	—	—	—	16	—							
71	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Alcoholism ..	85	—	—	—	—	—	—	21	—							
28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Cerebral hæmorrhage, etc. ..	25	—	—	—	—	—	—	27	—							
81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other dis. of the nervous system ..	19	—	—	—	—	—	—	34	—							
28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Valvular disease of heart ..	14	—	—	—	—	—	—	61	—							
81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other heart disease ..	76	—	—	—	—	—	—	34	—							
28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Arterio-sclerosis ..	79	—	—	—	—	—	—	53	—							
47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other dis. of circulatory system ..	54	—	—	—	—	—	—	33	—							
116	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Bronchitis ..	84	—	—	—	—	—	—	8	—							
75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Pneumonia ..	63	—	—	—	—	—	—	23	—							
13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Chronic interstitial pneumonia ..	6	—	—	—	—	—	—	101	—							
7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other dis. of respiratory system ..	6	—	—	—	—	—	—	8	—							
5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Ulcer of stomach ..	4	—	—	—	—	—	—	14	—							
5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Ulcer of duodenum ..	4	—	—	—	—	—	—	8	—							
16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Appendicitis ..	5	—	—	—	—	—	—	16	—							
9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Hernia ..	2	—	—	—	—	—	—	8	—							
5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Intestinal obstruction ..	2	—	—	—	—	—	—	12	—							
19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Cirrhosis of liver ..	6	—	—	—	—	—	—	14	—							
7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other dis. of digestive system ..	20	—	—	—	—	—	—	7	—							
7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Acute nephritis ..	3	—	—	—	—	—	—	16	—							
38	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Chronic nephritis ..	36	—	—	—	—	—	—	41	—							
9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Diseases of the prostate ..	13	—	—	—	—	—	—	23	—							
9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other genito-urinary diseases ..	13	—	—	—	—	—	—	90	—							
50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Old age ..	54	—	—	—	—	—	—	49	—							
17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Suicide ..	11	—	—	—	—	—	—	23	—							
32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Accident ..	13	—	—	—	—	—	—	8	—							
46	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other causes ..	43	—	—	—	—	—	—	24	—							
1,094	21	29	82	102	171	287	139	263	360	396	585	791	1377	3579	6667	17325	All causes ..	982	16	28	63	96	127	218	152	282	189	290	426	747	1036	2672	7126	16235
Years of life (Census population × 3)																Years of life (Census population × 3)																		
Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.																Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.																		
Comparative Mortality Figure (Standardized Death-rate)																Comparative Mortality Figure (Standardized Death-rate)																		
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																		

OCCUPATIONAL GROUP 66.—CUTTERS OF TEXTILE GOODS AND CLOTHING (NOT MACHINE CUTTERS) (402).

[illegible]

Ratio of Mortality to that of all Occurrences taken as 100.

4,503	3,126	4,725	9,186	7,272	5,886	2,955	801	552
—	143	162	134	95	121	113	93	125

Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the
rates for all Occupied and Retired Civilian Males 118

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MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

[illegible]

OCCUPATIONAL GROUP 71.—SKILLED BOOT AND SHOE OPERATIVES—
NOT CLICKERS OR CUTTERS (414).

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.							
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		16—	20—	25—	35—	45—	55—	65—	70 and up.
Influenza .. .	35	3	3	4	7	6	4	5		21	21	14	20	34	50	130	204
Respiratory tuberculosis .. .	272	22	37	52	60	37	6	5		154	261	252	261	293	310	196	204
Other tuberculosis .. .	17	3	5	4	1	1	1	—		21	14	24	20	5	8	33	—
Syphilis, etc. .. .	30	—	—	6	10	10	4	—		—	—	—	—	30	49	33	41
Tuberculous .. .	5	—	—	—	—	—	1	—		—	—	—	—	—	33	—	—
Tabes dorsalis .. .	7	—	—	2	2	5	2	—		—	—	—	10	10	8	65	—
General paralysis of insane .. .	11	—	—	2	3	4	—	—		—	—	—	10	14	33	—	—
Aneurysm .. .	7	—	—	2	3	—	—	—		—	—	—	10	15	8	41	—
Cancer, all sites .. .	180	1	—	8	37	54	35	44		7	—	5	40	452	142	1797	41
Skin .. .	8	—	—	—	1	1	—	1		—	—	—	—	5	8	—	—
Lip .. .	2	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—
Tongue .. .	6	—	—	—	—	—	—	—		—	—	—	—	—	—	—	82
Esophagus .. .	11	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—
Stomach .. .	40	—	—	1	9	18	9	4		—	—	—	5	10	25	98	163
Other sites .. .	118	1	—	7	25	29	21	34		7	—	5	35	122	243	685	1389
Chronic rheumatism, etc., Gout .. .	9	—	—	1	—	5	1	2		—	—	—	—	—	—	—	—
Diabetes .. .	13	—	1	—	—	5	1	1		7	7	—	5	—	42	33	82
Alcoholism .. .	108	—	—	—	—	—	—	—		—	—	—	—	—	33	41	—
Cerebral hemorrhage, etc. .. .	44	—	4	4	8	30	23	43		7	28	24	20	39	251	750	1757
Other dis. of the nervous system .. .	549	1	—	—	—	6	6	12		—	—	—	—	20	50	196	490
Valvular disease of heart .. .	93	3	5	7	14	28	11	17		21	35	38	35	68	234	359	694
Other heart disease .. .	122	2	1	6	12	31	24	40		14	7	28	30	59	259	783	1634
Arterio-sclerosis .. .	47	—	—	—	2	17	13	25		—	—	—	10	59	424	1021	—
Other dis. of circulatory system .. .	126	1	—	—	9	26	26	57		7	—	14	20	44	218	848	2322
Bronchitis .. .	86	1	4	5	18	23	12	6		7	28	24	90	83	193	391	245
Chronic interstitial pneumonia .. .	29	1	—	—	—	1	—	—		—	—	—	—	8	—	—	—
Other dis. of respiratory system .. .	19	1	2	2	4	7	2	9		7	14	9	10	20	59	65	368
Ulcer of stomach .. .	7	—	—	3	5	6	1	—		7	14	5	15	10	33	33	—
Ulcer of duodenum .. .	24	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—
Appendicitis .. .	11	2	1	3	2	3	—	—		14	7	14	—	10	25	—	—
Hernia .. .	6	—	—	—	—	—	1	—		—	—	—	—	—	—	33	163
Intestinal obstruction .. .	4	—	—	—	—	—	—	—		—	—	—	—	10	8	—	—
Cirrhosis of liver .. .	6	—	—	—	—	—	—	—		—	—	—	—	5	25	—	—
Other dis. of digestive system .. .	24	1	—	1	4	6	7	5		7	—	—	—	5	20	228	204
Acute nephritis .. .	3	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—
Chronic nephritis .. .	43	1	2	4	1	12	7	11		7	14	19	5	24	100	228	449
Diseases of the prostate .. .	15	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—
Old age .. .	12	—	—	—	—	—	—	—		—	—	—	—	15	25	163	286
Suicide .. .	86	—	—	—	—	—	—	—		—	—	—	—	5	15	8	163
Accident .. .	26	—	2	4	8	5	—	2		—	—	—	—	17	98	3309	—
Other causes .. .	18	2	7	1	3	10	8	9		14	19	40	24	42	—	—	82
	56	4	—	—	—	—	—	4		14	5	—	—	15	25	—	368

OCCUPATIONAL GROUP 70.—BOOT AND SHOE CLICKERS AND CUTTERS (413).

All Ages 16 and upwards.	Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.					
	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and up.
Influenza	15	3	1	—	—	—	—	1	40	14	28	—	38	69	85	137
Respiratory tuberculosis	117	5	19	31	26	5	—	1	67	263	259	328	330	115	170	137
Other tuberculosis	6	2	—	—	—	—	—	1	27	—	9	21	—	—	—	—
Syphilis, etc.	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tuberculous	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tabes dorsalis	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General paralysis of insane	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Aneurysm	79	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cancer, all sites	180	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Skin	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lip	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tongue	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Esophagus	11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Stomach	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other sites	118	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chronic rheumatism, etc., Gout	9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diabetes	13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcoholism	108	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cerebral hemorrhage, etc.	44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of the nervous system	549	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Valvular disease of heart	93	3	5	7	14	28	11	17	21	35	38	35	68	234	359	694
Other heart disease	122	2	1	6	12	31	24	24	14	7	28	30	59	259	783	1634
Arterio-sclerosis	47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of circulatory system	126	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bronchitis	125	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pneumonia	86	1	4	5	18	23	12	6	7	28	24	90	83	193	391	245
Chronic interstitial pneumonia	29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of respiratory system	19	1	2	2	4	7	2	9	7	14	9	10	20	59	65	368
Ulcer of stomach	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ulcer of duodenum	24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Appendicitis	11	2	1	3	—	—	—	—	—	—	—	—	—	—	—	—
Hernia	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Intestinal obstruction	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cirrhosis of liver	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of digestive system	24	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acute nephritis	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chronic nephritis	43	1	2	4	1	12	7	11	7	14	19	5	24	100	228	449
Diseases of the prostate	15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other genito-urinary diseases	12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Old age	86	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Suicide	26	—	2	4	8	5	—	—	—	—	—	—	—	—	—	—
Accident	18	2	7	1	3	10	8	2	14	19	40	24	42	15	25	—
Other causes	56	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
All causes	1,551	50	73	111	141	335	203	396	349	515	527	706	1,182	2,804	6,621	16,176

Years of life (Census population × 3) 107,451

Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100 117

Comparative Mortality Figure (Standardized Death-rate) 1,104

Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males 113

All Causes—ages 20-65 years.
Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males 112

OCCUPATIONAL GROUP 72.—GRAIN MILLERS (432).

Mean Annual Death-rate per 100,000.										
Numbers of Deaths at Ages—										
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.	
									16—	70 and up.
12	12	14	7	34	40	85	127	160		
29	64	145	141	136	164	190	32	58		
1	12	18	16	8	9	10	—	—		
4	—	—	—	23	40	35	32	15		
1	—	—	—	—	—	—	—	—		
2	—	—	—	—	—	—	—	—		
1	—	—	—	—	—	—	—	—		
56	—	—	—	—	—	—	—	—		
5	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	—		
2	—	—	—	—	—	—	—	—		
1	—	—	—	—	—	—	—	—		
5	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	—		
2	—	—	—	—	—	—	—	—		
16	—	—	—	—	—	—	—	—		
31	—	—	—	—	—	—	—	—		
5	—	—	—	—	—	—	—	—		
4	—	—	—	—	—	—	—	—		
5	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	—		
57	—	—	—	—	—	—	—	—		
17	—	—	—	—	—	—	—	—		
33	—	—	—	—	—	—	—	—		
51	—	—	—	—	—	—	—	—		
26	—	—	—	—	—	—	—	—		
2	—	—	—	—	—	—	—	—		
77	—	—	—	—	—	—	—	—		
26	—	—	—	—	—	—	—	—		
2	—	—	—	—	—	—	—	—		
12	—	—	—	—	—	—	—	—		
1	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	—		
3	—	—	—	—	—	—	—	—		
2	—	—	—	—	—	—	—	—		
2	—	—	—	—	—	—	—	—		
4	—	—	—	—	—	—	—	—		
11	—	—	—	—	—	—	—	—		
13	—	—	—	—	—	—	—	—		
16	—	—	—	—	—	—	—	—		
4	—	—	—	—	—	—	—	—		
47	—	—	—	—	—	—	—	—		
555	—	—	—	—	—	—	—	—		

CAUSE OF DEATH.

For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.

Influenza ..	71	3	3	3	13	17	8	11	12	14	7	34	40	85	127	160
Respiratory tuberculosis ..	259	16	16	53	52	38	2	4	64	145	141	136	164	190	32	58
Other tuberculosis ..	22	3	3	3	3	2	—	—	12	18	16	8	9	10	—	—
Syphilis, etc. ..	32	—	—	9	13	7	—	—	—	—	—	—	—	—	—	—
Syphilis ..	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tabes dorsalis ..	11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General paralysis of insane ..	15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Aneurysm ..	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cancer, all sites ..	294	—	2	16	66	86	51	69	—	9	42	204	429	812	1004	—
Skin ..	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lip ..	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tongue ..	17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Disophagus ..	23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Stomach ..	61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other sites ..	184	—	2	11	37	51	32	47	—	9	29	114	254	510	684	—
Chronic rheumatism, etc., Gout ..	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diabetes ..	25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcoholism ..	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cerebral hemorrhage, etc. ..	126	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of the nervous system ..	70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Valvular disease of heart ..	140	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other heart disease ..	187	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arterio-sclerosis ..	89	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of circulatory system ..	106	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bronchitis ..	191	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pneumonia ..	159	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chronic interstitial pneumonia ..	36	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of respiratory system ..	16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ulcer of stomach ..	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ulcer of duodenum ..	9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Appendicitis ..	10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hernia ..	53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Intestinal obstruction ..	75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cirrhosis of liver ..	106	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of digestive system ..	317	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acute nephritis ..	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chronic nephritis ..	58	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diseases of the prostate ..	22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other genito-urinary diseases ..	111	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Old age ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Suicide ..	44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Accident ..	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other causes ..	81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
All causes ..	2,196	60	83	154	202	336	426	686	241	377	351	527	1037	2126	3966	9981

Years of life (Census population × 3) 194,703

Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100. 6,873

Comparative Mortality Figure (Standardized Death-rate) 864

Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males 87

All Causes—ages 20-65 years.

Comparative Mortality Figure (Standardized Death-rate) 864

Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males 87

OCCUPATIONAL GROUP 75.—CELLARMEN (455).

[illegible]

OCCUPATIONAL GROUP 74.—BREWERS OF ALE, STOUT AND PORTER (453).

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.							
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		16—	20—	25—	35—	45—	55—	65—	70 and up.
5	—	—	1	—	—	—	1	3	—	82	—	—	—	—	—	—	483
8	—	—	2	—	3	—	—	1	—	164	—	—	62	169	82	—	161
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9	—	—	1	—	4	—	—	—	—	82	—	—	62	226	246	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5	—	—	—	1	—	—	—	—	—	—	—	—	62	226	—	—	—
3	—	—	1	—	2	—	5	14	—	82	—	—	62	113	903	1217	—
33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	161
4	—	—	—	—	1	—	1	—	—	—	—	—	—	56	164	243	—
22	—	—	—	—	—	—	7	3	—	—	—	—	62	56	575	730	483
—	—	—	—	1	—	—	—	10	—	—	—	—	—	—	—	—	1610
3	—	—	—	—	—	—	—	—	—	—	—	—	—	56	82	—	161
6	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	483
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	82
17	—	—	—	—	—	—	—	—	—	—	—	—	—	113	493	1217	644
3	—	—	—	—	—	—	1	1	—	—	—	—	—	—	82	243	161
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9	—	—	1	—	—	—	—	—	—	82	—	—	62	56	164	—	644
13	—	—	—	—	—	—	4	6	—	—	—	—	62	56	246	973	968
19	—	—	—	—	—	—	—	9	—	82	—	—	—	56	82	1703	1448
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
20	—	—	—	—	—	—	2	13	—	—	—	—	—	169	164	487	2098
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	808
9	—	—	—	—	—	—	1	5	—	—	—	—	—	56	164	243	808
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	2	1	—	—	—	—	—	56	164	243	—
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	62	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	13	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
218	—	1	7	8	33	47	31	91	—	187	576	496	1861	3859	7543	14654	—

Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the
rates for all Occupied and Retired Civilian Males

OCCUPATIONAL GROUP 79.—CARPENTERS, COACH BUILDERS, PATTERN MAKERS AND
SIMILAR OCCUPATIONS (474-477, 479, 480, 482).

CAUSE OF DEATH.

For the precise significance of each title and its relation to the International List, of Causes of Death, see page 1.

OCCUPATIONAL GROUP 78.—CABINET MAKERS (473).

Numbers of Deaths at Ages—

Mean Annual Death-rate per 100,000.

Mean Annual Death-rate per 100,000.

Numbers of Deaths at Ages—

Mean Annual Death-rate per 100,000.

All Ages 16 and upwards.	Numbers of Deaths at Ages—					Mean Annual Death-rate per 100,000.					Mean Annual Death-rate per 100,000.					Numbers of Deaths at Ages—					Mean Annual Death-rate per 100,000.				
	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	
Influenza	359	12	14	27	33	47	76	41	15	19	17	17	17	35	66	109	15	19	17	17	17	35	66	98	
Respiratory tuberculosis	980	56	101	185	220	223	138	42	68	137	116	115	115	164	119	100	15	137	116	115	115	164	119	100	
Other tuberculosis	121	19	16	32	18	9	17	5	23	22	9	7	7	15	10	31	5	23	22	9	7	15	10	31	
Syphilis, etc.	192	—	1	3	40	51	57	15	—	1	2	21	37	49	36	52	25	—	1	2	21	37	49	36	
Syphilis	15	—	—	—	2	6	3	1	—	—	—	—	—	4	3	4	2	—	—	—	—	4	3	4	
Tabes dorsalis	46	—	—	—	2	13	17	8	—	—	—	—	—	10	15	12	6	—	—	—	—	10	15	12	
General paralysis of insane	76	—	—	3	32	23	14	—	—	—	—	—	—	17	12	8	—	—	—	—	17	12	8		
Aneurysm	55	—	—	—	23	14	—	6	—	—	—	—	—	20	14	27	13	—	—	—	20	14	27		
Cancer, all sites	1,782	6	3	14	86	197	328	571	—	7	4	9	45	145	493	783	1,782	7	4	9	45	145	493		
Skin	50	—	—	—	2	4	11	14	—	—	—	—	—	3	9	33	50	—	—	—	—	3	9	33	
Lip	12	—	—	—	—	—	3	—	—	—	—	—	—	—	—	—	8	—	—	—	—	—	—	—	
Tongue	88	—	—	—	—	—	15	35	—	—	—	—	—	17	17	17	12	—	—	—	—	17	17	17	
Esophagus	144	—	—	—	—	—	23	54	—	—	—	—	—	11	30	33	144	—	—	—	—	11	30	33	
Stomach	364	—	—	—	—	—	43	129	—	—	—	—	—	17	47	60	364	—	—	—	—	17	47	60	
Other sites	1,124	6	3	13	59	110	341	206	—	7	4	8	31	81	294	492	1,124	6	3	8	31	81	294	492	
Chronic rheumatism, etc., Gout	69	—	—	—	5	4	20	12	—	—	—	—	—	3	17	29	69	—	—	—	—	3	17	29	
Diabetes	117	—	—	—	17	11	24	16	—	—	—	—	—	9	8	21	117	—	—	—	—	9	8	21	
Alcoholism	1,116	—	—	—	1	—	177	—	—	—	—	—	—	50	162	423	1,116	—	—	—	—	50	162	423	
Other dis. of the nervous system	361	10	8	28	48	71	47	177	—	12	11	18	25	35	61	112	361	10	8	18	25	35	61	112	
Valvular disease of heart	865	2	13	21	59	92	189	143	—	2	18	13	31	68	163	342	865	2	13	18	31	68	163	342	
Other heart disease	1,186	6	5	28	30	75	212	220	—	6	7	18	16	55	183	525	1,186	6	7	18	16	55	183	525	
Arterio-sclerosis	734	2	—	1	5	17	116	106	—	2	—	—	—	12	100	253	734	2	—	—	—	12	100	253	
Other dis. of circulatory system	37	2	—	1	5	8	2	—	—	2	—	—	—	3	6	7	37	2	—	—	—	3	6	7	
Bronchitis	1,096	2	3	5	26	44	154	144	—	2	4	3	14	32	133	344	1,096	2	3	4	3	14	32	133	
Pneumonia	731	21	18	41	93	104	156	111	—	25	24	26	49	76	135	265	731	21	18	26	49	76	135	265	
Chronic interstitial pneumonia	180	—	3	9	9	23	42	23	—	—	—	—	—	17	36	55	180	—	3	9	—	17	36	55	
Other dis. of respiratory system	77	2	3	4	20	9	20	8	—	2	4	3	10	17	19	23	77	2	3	4	3	10	17	19	
Ulcer of stomach	37	—	1	3	11	9	6	4	—	—	—	—	—	7	5	10	37	—	1	2	6	7	5	10	
Ulcer of duodenum	62	7	8	9	10	16	16	1	—	8	9	10	6	5	7	14	62	7	8	11	6	5	7	14	
Hernia	63	—	—	—	3	5	7	6	—	—	—	—	—	2	4	6	63	—	—	—	—	2	4	6	
Intestinal obstruction	65	—	2	4	2	5	13	8	—	—	—	—	—	3	4	8	65	—	2	3	3	3	4	8	
Cirrhosis of liver	53	—	—	1	3	10	18	9	—	—	—	—	—	12	11	25	53	—	—	—	—	12	11	25	
Other dis. of digestive system	206	3	2	4	21	29	39	26	—	3	2	3	11	21	34	62	206	3	2	3	11	21	34	62	
Acute nephritis	35	—	—	2	4	9	12	3	—	—	—	—	—	7	10	7	35	—	—	—	—	7	10	7	
Chronic nephritis	454	3	—	17	24	58	124	59	—	—	—	—	—	43	107	141	454	3	—	11	13	43	107	141	
Diseases of the prostate	184	—	—	—	—	23	29	130	—	—	—	—	—	1	20	69	184	—	—	—	—	1	20	69	
Other genito-urinary diseases	111	—	—	—	—	9	20	57	—	—	—	—	—	3	15	48	111	—	—	—	—	3	15	48	
Old age	1,176	—	—	—	—	—	9	48	—	—	—	—	—	8	115	2309	1,176	—	—	—	—	8	115	2309	
Suicide	172	1	3	11	32	32	44	22	—	—	—	—	—	7	17	24	172	1	3	7	17	24	37		
Accident	355	20	20	31	36	50	66	37	—	20	20	31	36	50	66	37	355	20	20	27	19	37	57		
Other causes	520	20	15	35	57	65	118	80	—	20	15	35	57	65	118	80	520	20	15	27	19	37	57		
All causes	13,499	202	247	532	941	1,323	2,573	1,792	—	245	334	333	493	973	2,220	4,280	13,499	202	247	334	333	493	973	2,220	
Comparative Mortality Figure (Standardized Death-rate) Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males	843	84	86	86	86	86	86	86	—	82,521	73,914	159,663	190,698	136,008	115,893	41,868	843	84	86	86	86	86	86	86	

All Causes—ages 20-65 years.
Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the
rates for all Occupied and Retired Civilian Males

OCCUPATIONAL GROUP 82.—UPHOLSTERERS, COACH TRIMMERS AND BEDDING MAKERS
(502, 504).

(502, 504).

[illegible]

CAUSE OF DEATH

OCCUPATIONAL GROUP 83.—PAPER MILL WORKERS (511-519).

Numbers of Deaths at Ages—											Mean Annual Death-rate per 100,000.											CAUSE OF DEATH.	Numbers of Deaths at Ages—											Mean Annual Death-rate per 100,000.										
All Ages 16 and upwards.											16—20—25—35—45—55—65—70 and upwards.											For the precise significance of each title and its relation to the International list of Causes of Death, see page 1.	All Ages 16 and upwards.											16—20—25—35—45—55—65—70 and upwards.										
16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—		65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.												
21	2	3	2	1	4	2	6	28	13	21	17	11	11	71	116	325	Influenza ..	15	1	1	—	—	—	—	—	—	—	—	—	—	—	5												
98	4	10	18	23	12	4	1	56	128	184	148	8	264	212	233	54	Respiratory tuberculosis ..	49	8	16	10	—	—	—	—	—	—	—	—	—	—	—												
7	—	—	1	1	—	—	—	51	51	7	25	11	53	—	—	—	Other tuberculosis ..	5	—	—	3	—	—	—	—	—	—	—	—	—	—	—												
8	—	—	3	1	—	—	—	—	—	—	25	11	—	—	—	—	Syphilis, etc. ..	6	—	—	1	—	—	—	—	—	—	—	—	—	—	—												
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Synphitis ..	1	—	—	—	—	—	—	—	—	—	—	—	—	—													
1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	Tabes dorsalis ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—													
4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	General paralysis of insane ..	3	—	—	—	—	—	—	—	—	—	—	—	—	—													
2	2	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	Aneurysm ..	2	—	—	—	—	—	—	—	—	—	—	—	—	—													
110	2	1	8	12	33	20	33	28	13	7	66	11	—	—	—	—	Cancer, all sites ..	51	—	—	2	5	11	16	—	—	—	—	—	—	8													
3	—	—	1	1	—	—	2	—	—	—	—	—	—	—	—	—	Skin ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—													
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Lip ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—													
6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Tongue ..	2	—	—	—	—	—	—	—	—	—	—	—	—	—													
14	—	—	1	1	1	1	—	—	—	—	—	—	—	—	—	—	Osophagus ..	3	—	—	—	—	—	—	—	—	—	—	—	—	—													
19	—	—	2	7	7	3	1	—	—	7	25	23	124	233	54	216	Stomach ..	15	—	—	—	—	—	—	—	—	—	—	—	—	—													
68	2	1	5	18	12	12	23	28	13	—	42	80	318	698	1245	—	Other sites ..	31	—	2	5	5	9	5	—	—	—	—	—	—	5													
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..	2	—	—	—	—	—	—	—	—	—	—	—	—	—													
3	—	—	—	—	—	—	1	—	—	7	11	—	—	—	—	—	Diabetes ..	2	—	—	—	—	—	—	—	—	—	—	—	—	—													
5	1	—	—	—	—	—	—	14	—	—	11	—	—	—	—	—																												

	7,131	7,770	14,172	12,042	8,697	5,664	1,719	1,848	Years of life (Census population × 3)	.. .. .
—	102	91	88	82	92	83	105	82	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	.. .. .

Comparative Mortality Figure (Standardized Death-rate)	..	864
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males	..	86

OCCUPATIONAL GROUP 86.—PHOTOGRAPHERS (527).

**OCCUPATIONAL GROUP 87.—PRINTING MACHINE MINDERS AND ASSISTANTS;
MACHINE RULERS (529-531, 533).**

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.									
For the significance of each title and its relation to the International List of Causes of Death, see page 1.																			
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	
Influenza ..	47	5	—	7	6	9	7	5	Respiratory tuberculosis ..	226	27	—	—	—	—	—	—	141	
Other tuberculosis ..	24	3	4	46	48	42	32	1	Syphilis, etc. ..	30	2	—	2	2	7	—	—	28	
Syphilis ..	2	1	—	2	9	7	—	—	Tabes dorsalis ..	5	—	—	—	—	—	—	—	14	
General paralysis of insane ..	16	1	—	—	9	2	1	—	Aneurysm ..	7	2	—	1	—	3	—	—	13	
Cancer, all sites ..	170	2	—	2	9	32	55	2	Skin ..	2	—	—	—	—	—	—	—	104	
Lip ..	—	—	—	—	—	—	—	—	Tongue ..	10	—	—	—	—	—	—	—	57	
Osophagus ..	15	—	—	—	—	—	—	—	Stomach ..	38	—	—	—	—	—	—	—	198	
Other sites ..	105	2	—	2	5	18	36	23	Chronic rheumatism, etc., Gout ..	10	—	—	—	—	—	—	—	651	
Diabetes ..	13	1	1	3	1	2	4	2	Alcoholism ..	78	1	—	—	—	—	—	—	57	
Cerebral hemorrhage, etc. ..	45	3	4	4	2	12	1	7	Other dis. of the nervous system ..	905	3	4	8	57	195	289	905		
Valvular disease of heart ..	94	4	6	9	9	20	16	14	Arterio-sclerosis ..	48	—	—	—	—	—	—	—	453	
Other heart disease ..	118	1	—	8	11	28	19	41	Other dis. of circulatory system ..	107	—	—	—	—	—	—	—	1160	
Bronchitis ..	81	1	4	9	10	23	16	48	Pneumonia ..	12	—	—	—	—	—	—	—	28	
Chronic interstitial pneumonia ..	12	—	—	—	—	6	1	11	Ulcer of stomach ..	7	—	—	—	—	—	—	—	1358	
Ulcer of stomach ..	10	—	—	—	2	2	—	—	Appendicitis ..	3	—	—	—	—	—	—	—	311	
Ulcer of duodenum ..	8	—	—	—	—	—	—	—	Hernia ..	4	—	—	—	—	—	—	—	96	
Acute nephritis ..	5	—	—	—	—	—	—	—	Intestinal obstruction ..	18	1	1	2	3	2	—	—	—	
Chronic nephritis ..	46	1	3	—	4	9	5	13	Other dis. of digestive system ..	5	—	—	—	—	—	—	—	—	
Diseases of the prostate ..	14	—	—	—	—	—	—	9	Acute nephritis ..	20	—	—	—	—	—	—	—	28	
Other genito-urinary diseases ..	64	—	—	—	—	—	—	59	Diseases of the prostate ..	37	—	—	—	—	—	—	—	368	
Old age ..	20	—	—	—	—	—	—	2	Old age ..	58	—	—	—	—	—	—	—	255	
Suicide ..	4	—	—	—	—	—	—	2	Suicide ..	3	—	—	—	—	—	—	—	1669	
Accident ..	3	3	5	10	11	12	1	8	Accident ..	—	—	—	—	—	—	—	—	—	
Other causes ..	—	—	—	—	—	—	—	—	Other causes ..	—	—	—	—	—	—	—	—	—	
All causes ..	1,414	59	56	128	151	233	304	340	All causes ..	1,414	59	56	128	151	233	304	340	962	
Years of life (Census population × 3) ..	21,780	17,091	30,690	26,394	21,228	10,758	3,114	3,534	Years of life (Census population × 3) ..	21,780	17,091	30,690	26,394	21,228	10,758	3,114	3,534	962	
Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	110	93	105	90	95	110	92	71	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	110	93	105	90	95	110	92	71	962	
All Causes—ages 20–65 years.																			
Comparative Mortality Figure (Standardized Death-rate)																			
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																			
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																			
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																			

MORTALITY OF MALES IN SEVERAL OCCUPATIONS 1921-23.

OCCUPATIONAL GROUP 88.—BOOKBINDERS AND PATTERN CARD MAKERS (532, 534).										OCCUPATIONAL GROUP 89.—EMPLOYERS AND MANAGERS IN THE BUILDING, CONTRACTING AND DECORATING TRADES; CLERKS OF WORKS (560, 562, 563, 590).									
Mean Annual Death-rate per 100,000.										Mean Annual Death-rate per 100,000.									
Numbers of Deaths at Ages—										Numbers of Deaths at Ages—									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	
CAUSE OF DEATH.																			
For the precise significance of each title and its relation to the International List of Causes of Death, see page I.																			
Influenza ..	121	—	—	—	—	—	—	—	—	Influenza ..	121	—	—	—	—	—	—	—	—
Respiratory tuberculosis ..	197	—	—	—	—	—	—	—	—	Respiratory tuberculosis ..	197	—	—	—	—	—	—	—	—
Other tuberculosis ..	19	—	—	—	—	—	—	—	—	Other tuberculosis ..	19	—	—	—	—	—	—	—	—
Syphilis, etc. ..	59	—	—	—	—	—	—	—	—	Syphilis, etc. ..	59	—	—	—	—	—	—	—	—
Syphilis ..	6	—	—	—	—	—	—	—	—	Syphilis ..	6	—	—	—	—	—	—	—	—
Tabes dorsalis ..	17	—	—	—	—	—	—	—	—	Tabes dorsalis ..	17	—	—	—	—	—	—	—	—
General paralysis of insane ..	18	—	—	—	—	—	—	—	—	General paralysis of insane ..	18	—	—	—	—	—	—	—	—
Aneurysm ..	18	—	—	—	—	—	—	—	—	Aneurysm ..	18	—	—	—	—	—	—	—	—
Cancer, all sites ..	753	—	—	—	—	—	—	—	—	Cancer, all sites ..	753	—	—	—	—	—	—	—	—
Skin ..	18	—	—	—	—	—	—	—	—	Skin ..	18	—	—	—	—	—	—	—	—
Lip ..	7	—	—	—	—	—	—	—	—	Lip ..	7	—	—	—	—	—	—	—	—
Tongue ..	25	—	—	—	—	—	—	—	—	Tongue ..	25	—	—	—	—	—	—	—	—
Esophagus ..	40	—	—	—	—	—	—	—	—	Esophagus ..	40	—	—	—	—	—	—	—	—
Stomach ..	155	—	—	—	—	—	—	—	—	Stomach ..	155	—	—	—	—	—	—	—	—
Other sites ..	508	—	—	—	—	—	—	—	—	Other sites ..	508	—	—	—	—	—	—	—	—
Chronic rheumatism, etc., Gout ..	31	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..	31	—	—	—	—	—	—	—	—
Diabetes ..	77	—	—	—	—	—	—	—	—	Diabetes ..	77	—	—	—	—	—	—	—	—
Alcoholism ..	5	—	—	—	—	—	—	—	—	Alcoholism ..	5	—	—	—	—	—	—	—	—
Cerebral hemorrhage, etc. ..	526	—	—	—	—	—	—	—	—	Cerebral hemorrhage, etc. ..	526	—	—	—	—	—	—	—	—
Other dis. of the nervous system ..	110	—	—	—	—	—	—	—	—	Other dis. of the nervous system ..	110	—	—	—	—	—	—	—	—
Valvular disease of heart ..	364	—	—	—	—	—	—	—	—	Valvular disease of heart ..	364	—	—	—	—	—	—	—	—
Other heart disease ..	575	—	—	—	—	—	—	—	—	Other heart disease ..	575	—	—	—	—	—	—	—	—
Arterio-sclerosis ..	314	—	—	—	—	—	—	—	—	Arterio-sclerosis ..	314	—	—	—	—	—	—	—	—
Other dis. of circulatory system ..	21	—	—	—	—	—	—	—	—	Other dis. of circulatory system ..	21	—	—	—	—	—	—	—	—
Bronchitis ..	370	—	—	—	—	—	—	—	—	Bronchitis ..	370	—	—	—	—	—	—	—	—
Pneumonia ..	247	—	—	—	—	—	—	—	—	Pneumonia ..	247	—	—	—	—	—	—	—	—
Chronic interstitial pneumonia ..	6	—	—	—	—	—	—	—	—	Chronic interstitial pneumonia ..	6	—	—	—	—	—	—	—	—
Other dis. of respiratory system ..	85	—	—	—	—	—	—	—	—	Other dis. of respiratory system ..	85	—	—	—	—	—	—	—	—
Ulcer of stomach ..	33	—	—	—	—	—	—	—	—	Ulcer of stomach ..	33	—	—	—	—	—	—	—	—
Ulcer of duodenum ..	18	—	—	—	—	—	—	—	—	Ulcer of duodenum ..	18	—	—	—	—	—	—	—	—
Appendicitis ..	26	—	—	—	—	—	—	—	—	Appendicitis ..	26	—	—	—	—	—	—	—	—
Hernia ..	21	—	—	—	—	—	—	—	—	Hernia ..	21	—	—	—	—	—	—	—	—
Intestinal obstruction ..	27	—	—	—	—	—	—	—	—	Intestinal obstruction ..	27	—	—	—	—	—	—	—	—
Cirrhosis of liver ..	47	—	—	—	—	—	—	—	—	Cirrhosis of liver ..	47	—	—	—	—	—	—	—	—
Other dis. of digestive system ..	90	—	—	—	—	—	—	—	—	Other dis. of digestive system ..	90	—	—	—	—	—	—	—	—
Acute nephritis ..	12	—	—	—	—	—	—	—	—	Acute nephritis ..	12	—	—	—	—	—	—	—	—
Chronic nephritis ..	229	—	—	—	—	—	—	—	—	Chronic nephritis ..	229	—	—	—	—	—	—	—	—
Diseases of the prostate ..	100	—	—	—	—	—	—	—	—	Diseases of the prostate ..	100	—	—	—	—	—	—	—	—
Other genito-urinary diseases ..	64	—	—	—	—	—	—	—	—	Other genito-urinary diseases ..	64	—	—	—	—	—	—	—	—
Old age ..	402	—	—	—	—	—	—	—	—	Old age ..	402	—	—	—	—	—	—	—	—
Suicide ..	63	—	—	—	—	—	—	—	—	Suicide ..	63	—	—	—	—	—	—	—	—
Accident ..	156	—	—	—	—	—	—	—	—	Accident ..	156	—	—	—	—	—	—	—	—
Other causes ..	168	—	—	—	—	—	—	—	—	Other causes ..	168	—	—	—	—	—	—	—	—
All causes ..	5,336	—	—	—	—	—	—	—	—	All causes ..	5,336	—	—	—	—	—	—	—	—
Years of life (Census population × 3) ..	196,515	4,830	5,442	23,862	49,857	47,040	36,732	12,849	15,903	Years of life (Census population × 3) ..	196,515	4,830	5,442	23,862	49,857	47,040	36,732	12,849	15,903
Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	—	50	63	89	95	95	115	116	119	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	—	50	63	89	95	95	115	116	119
All Causes—ages 20-65 years.																			
Comparative Mortality Figure (Standardized Death-rate)																			
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..																			
28,050	3,087	2,718	6,030	5,208	5,181	3,444	1,161	1,221	1,098	28,050	3,087	2,718	6,030	5,208	5,181	3,444	1,161	1,221	1,098
—	170	178	112	90	112	107	93	87	110	—	170	178	112	90	112	107	93	87	110

OCCUPATIONAL GROUP 90.—FOREMEN AND GANGERS (BUILDING AND CONTRACTING) (561).

CAUSE OF DEATH.

For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.

Mean Annual Death-rate per 100,000.

Numbers of Deaths at Ages—

All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.
35	—	—	—	—	—	—	—	9
26	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—
17	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—
145	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—
40	—	—	—	—	—	—	—	—
86	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—
16	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
71	—	—	—	—	—	—	—	—
22	—	—	—	—	—	—	—	—
67	—	—	—	—	—	—	—	—
102	—	—	—	—	—	—	—	—
54	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—
103	—	—	—	—	—	—	—	—
64	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—
15	—	—	—	—	—	—	—	—
10	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—
11	—	—	—	—	—	—	—	—
17	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—
36	—	—	—	—	—	—	—	—
16	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—
61	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—
42	—	—	—	—	—	—	—	—
1,065	—	—	—	—	—	—	—	—

60,447	84	561	4,632	16,728	19,107	13,329	3,336	2,670
—	—	—	51	65	61	81	79	88
—	—	—	—	—	—	—	—	—

Years of life (Census population × 3)	14,943	13,047	35,220	76,197	56,133	42,174	14,469	13,392
Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	76	70	73	81	91	89	95	98

Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

732
76

OCCUPATIONAL GROUP 91.—BRICKLAYERS (565).

CAUSE OF DEATH.

For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.

Mean Annual Death-rate per 100,000.

Numbers of Deaths at Ages—

All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.
117	1	1	4	14	15	26	25	31
319	7	9	23	95	95	57	18	10
21	2	2	1	2	5	5	1	1
81	—	—	—	18	27	17	3	5
15	—	—	—	4	1	6	3	12
17	—	—	—	1	7	2	2	4
28	—	—	—	12	12	3	—	—
21	—	—	—	25	95	6	—	—
701	—	—	—	—	—	221	139	216
24	—	—	—	1	3	6	3	11
8	—	—	—	—	1	2	2	3
49	—	—	—	—	5	22	11	12
58	—	—	—	2	10	22	11	13
133	—	—	—	6	20	42	22	13
429	—	—	—	15	56	127	92	41
21	—	—	—	—	5	10	4	2
31	—	—	—	2	3	10	3	11
2	—	—	—	—	—	—	—	—
326	—	—	—	6	19	65	57	178
94	1	3	3	13	17	14	17	26
323	—	—	—	30	40	70	51	117
378	—	—	—	18	31	75	66	182
222	—	—	—	—	10	36	44	132
7	—	—	—	—	2	4	—	—
438	—	—	—	8	33	68	72	255
313	5	3	13	50	56	78	39	69
3	—	—	—	—	1	2	—	—
70	—	—	—	8	16	13	9	23
31	—	—	—	7	8	6	1	5
10	—	—	—	3	1	5	—	—
21	—	—	—	4	7	4	1	2
23	—	—	—	2	2	3	1	5
23	—	—	—	—	1	4	5	12
29	—	—	—	3	8	10	4	—
70	—	—	—	8	7	19	9	25
11	—	—	—	1	5	2	—	2
117	—	—	—	10	15	34	15	39
56	—	—	—	—	—	9	15	32
39	—	—	—	3	4	10	6	16
308	—	—	—	—	—	5	11	292
70	—	—	—	17	13	17	15	7
171	—	—	—	28	33	38	27	30
139	—	—	—	18	14	35	21	36
4,585	28	32	103	394	589	970	686	1,783

265,575	14,943	13,047	35,220	76,197	56,133	42,174	14,469	13,392
—	76	70	73	81	91	89	95	98

Years of life (Census population × 3)	14,943	13,047	35,220	76,197	56,133	42,174	14,469	13,392
Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	76	70	73	81	91	89	95	98

Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

732
76

OCCUPATIONAL GROUP 94.—MASON, STONE CUTTERS AND DRESSERS* (572, 575).

OCCUPATIONAL GROUP 95.—SLATE MASONS AND SLATE WORKERS (576).

Mean Annual Death-rate per 100,000.											Mean Annual Death-rate per 100,000.														
Numbers of Deaths at Ages—											Numbers of Deaths at Ages—														
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.		All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.					
CAUSE OF DEATH.											CAUSE OF DEATH.														
Influenza .. Respiratory tuberculosis .. Other tuberculosis .. Syphilis, etc. .. Scurvy .. Tuberculosis .. General paralysis of insane .. Aneurysm .. Cancer, all sites .. Skin .. Lip .. Tongue .. Gastrophagus .. Stomach .. Other sites .. Chronic rheumatism, etc., Gout .. Diabetes .. Alcoholism .. Cerebral hemorrhage, etc. .. Other dis. of the nervous system .. Valvular disease of heart .. Other heart disease .. Arterio-sclerosis .. Other dis. of circulatory system .. Bronchitis .. Pneumonia .. Chronic interstitial pneumonia .. Other dis. of respiratory system .. Ulcer of stomach .. Ulcer of duodenum .. Appendicitis .. Hernia .. Intestinal obstruction .. Cirrhosis of liver .. Other dis. of digestive system .. Acute nephritis .. Chronic nephritis .. Diseases of the prostate .. Other genito-urinary diseases .. Old age .. Suicide .. Accident .. Other causes .. All causes											Influenza .. Respiratory tuberculosis .. Other tuberculosis .. Syphilis, etc. .. Scurvy .. Tuberculosis .. General paralysis of insane .. Aneurysm .. Cancer, all sites .. Skin .. Lip .. Tongue .. Gastrophagus .. Stomach .. Other sites .. Chronic rheumatism, etc., Gout .. Diabetes .. Alcoholism .. Cerebral hemorrhage, etc. .. Other dis. of the nervous system .. Valvular disease of heart .. Other heart disease .. Arterio-sclerosis .. Other dis. of circulatory system .. Bronchitis .. Pneumonia .. Chronic interstitial pneumonia .. Other dis. of respiratory system .. Ulcer of stomach .. Ulcer of duodenum .. Appendicitis .. Hernia .. Intestinal obstruction .. Cirrhosis of liver .. Other dis. of digestive system .. Acute nephritis .. Chronic nephritis .. Diseases of the prostate .. Other genito-urinary diseases .. Old age .. Suicide .. Accident .. Other causes .. All causes														
89 364 30 32 2	4	1	—	—	—	—	—	—	6 39 3 1 —	Influenza .. Respiratory tuberculosis .. Other tuberculosis .. Syphilis, etc. .. Scurvy .. Tuberculosis .. General paralysis of insane .. Aneurysm .. Cancer, all sites .. Skin .. Lip .. Tongue .. Gastrophagus .. Stomach .. Other sites .. Chronic rheumatism, etc., Gout .. Diabetes .. Alcoholism .. Cerebral hemorrhage, etc. .. Other dis. of the nervous system .. Valvular disease of heart .. Other heart disease .. Arterio-sclerosis .. Other dis. of circulatory system .. Bronchitis .. Pneumonia .. Chronic interstitial pneumonia .. Other dis. of respiratory system .. Ulcer of stomach .. Ulcer of duodenum .. Appendicitis .. Hernia .. Intestinal obstruction .. Cirrhosis of liver .. Other dis. of digestive system .. Acute nephritis .. Chronic nephritis .. Diseases of the prostate .. Other genito-urinary diseases .. Old age .. Suicide .. Accident .. Other causes .. All causes	1 1 —														

* For an analysis of the mortality of these workers in different parts of the country, see page 116.

OCCUPATIONAL GROUP 98.—PAINTERS AND DECORATORS (592, 593).

OCCUPATIONAL GROUP 99.—BUILDING TRADE LABOURERS (564, 566, 568, 573, 589, 599).									
CAUSE OF DEATH.									
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.									
Numbers of Deaths at Ages—									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.
16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.	
221	2	1	15	21	51	72	18	41	273
763	26	48	118	210	188	140	23	10	67
50	4	6	10	11	10	44	8	—	10
155	—	—	11	41	40	7	2	11	38
21	—	—	2	5	4	8	—	2	13
75	—	—	—	1	2	12	1	4	27
20	—	—	—	—	—	13	4	2	13
39	—	—	9	28	19	13	4	2	13
1,040	—	—	12	48	187	390	204	199	137
20	—	—	1	2	4	6	3	4	27
8	—	—	—	1	1	2	1	2	13
65	—	—	—	1	10	2	11	12	80
68	—	—	—	1	10	35	18	15	100
228	—	—	1	14	42	79	43	49	327
622	—	—	9	26	106	237	127	117	780
65	—	—	1	5	14	19	17	9	60
60	—	—	7	11	11	11	9	7	47
—	—	—	—	—	—	—	—	—	43
687	—	—	4	21	99	196	131	232	1548
207	—	—	16	34	32	47	41	33	66
537	—	—	32	58	95	132	89	124	423
601	—	—	6	23	34	67	142	101	827
380	—	—	1	4	31	79	71	194	481
14	—	—	—	4	3	4	4	1	338
657	—	—	2	26	87	124	106	307	1294
493	—	—	15	69	107	126	62	73	504
2	—	—	—	—	—	—	—	—	2048
119	—	—	3	22	22	30	19	23	487
68	—	—	8	18	17	13	6	6	295
24	—	—	3	6	7	3	4	—	153
33	—	—	5	5	4	9	2	1	40
35	—	—	1	2	7	4	4	17	19
29	—	—	—	5	6	7	4	6	10
40	—	—	—	2	13	9	9	7	13
107	—	—	2	11	17	25	21	26	47
31	—	—	6	7	9	9	61	67	100
431	—	—	13	47	106	135	61	67	173
76	—	—	—	—	—	8	17	50	290
80	—	—	—	—	—	23	17	30	447
330	—	—	—	—	—	7	26	297	334
117	—	—	3	21	33	34	13	6	62
287	—	—	14	42	60	63	36	38	200
301	—	—	6	54	67	77	34	38	181
8,050	71	127	390	845	1,405	1,989	1,146	2,077	1,060
508,539	29,112	36,819	105,024	122,724	107,988	70,863	21,018	14,991	106
—	99	98	93	108	113	109	109	102	106

CAUSE OF DEATH.									
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.									
Numbers of Deaths at Ages—									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.
16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.	
192	4	10	18	27	34	54	18	27	27
729	19	51	90	181	222	126	27	13	88
43	4	7	8	2	12	3	2	5	95
110	1	—	4	24	45	27	5	4	12
15	1	—	2	1	6	3	1	1	6
18	—	—	—	3	7	5	1	2	2
48	—	—	—	17	20	14	1	—	16
32	—	—	—	3	12	312	5	—	26
854	1	—	9	45	195	9	1	—	578
23	—	—	—	1	6	9	3	6	979
17	—	—	—	—	3	8	1	5	—
61	—	—	—	—	16	23	11	10	—
138	—	—	—	—	13	28	11	10	—
198	—	—	—	—	47	76	28	29	—
472	1	3	7	28	110	168	84	71	—
21	—	—	—	—	1	4	5	10	—
25	—	—	—	—	1	8	2	3	—
3	—	—	—	—	6	108	56	—	—
321	—	—	—	—	36	16	1	—	—
133	3	12	19	17	31	14	14	21	—
369	6	10	27	51	70	98	59	48	—
465	—	5	17	44	74	118	72	135	—
265	—	—	—	—	23	48	55	137	—
12	—	—	—	—	2	5	1	3	—
606	1	—	5	34	84	157	95	230	—
516	7	19	57	104	131	93	55	50	—
3	—	—	—	—	—	90	17	13	—
99	1	3	4	9	22	22	1	—	—
66	—	3	6	14	23	16	7	2	—
23	—	—	1	10	4	7	1	—	—
31	2	6	7	1	6	5	3	1	—
30	—	—	—	—	8	7	4	3	—
27	2	1	2	2	5	7	3	5	—
26	—	—	—	—	10	7	2	—	—
83	—	4	14	11	19	16	4	15	—
19	1	—	1	5	8	2	—	2	—
165	1	—	5	14	50	32	24	21	—
50	—	—	—	—	11	6	17	25	—
51	—	—	—	—	11	12	12	18	—
233	—	—	—	—	1	16	28	198	—
83	1	5	8	21	13	26	7	2	—
303	10	19	29	54	76	75	22	18	—
211	8	7	13	36	53	59	14	21	—
6,147	72	167	350	733	1,278	1,501	766	1,280	—
466,644	32,583	53,505	102,111	104,958	98,157	53,982	14,097	7,251	—
—	89	89	86	109	113	108	109	130	—

All Causes—ages 20-65 years.
Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

All Causes—ages 20-65 years.
Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 100.—RUBBER WORKERS (601-609).													OCCUPATIONAL GROUP 101.—DRAFTERS AND BRUSH MAKERS (633).												
CAUSE OF DEATH.													Numbers of Deaths at Ages—												
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.													Mean Annual Death-rate per 100,000.												
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.																	
7 43 2 4 1	— 3 — — —	— 10 — — —	— 5 — — —	— 1 — — —	— — — — —	— — — — —	— — — — —	— — — — —	7 43 2 4 1	Influenza .. Respiratory tuberculosis .. Other tuberculosis .. Syphilis, etc. .. Syphilis ..	16— 180 — — —	20— 819 — — —	25— 205 — — —	35— 225 — — —	45— 519 — — —	55— 225 — — —	65— 519 — — —	70 and upwards.							
1 1 38 —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	1 1 38 —	Tabes dorsalis .. General paralysis of insane .. Aneurysm .. Cancer, all sites .. Skin ..	16— — — — —	20— — — — —	25— — — — —	35— — — — —	45— — — — —	55— — — — —	65— — — — —	70 and upwards.								
1 2 2 6 27	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	1 2 2 6 27	Lip .. Tongue .. Esophagus .. Stomach .. Other sites ..	16— — — — —	20— — — — —	25— — — — —	35— — — — —	45— — — — —	55— — — — —	65— — — — —	70 and upwards.								
— — 18 9	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — 18 9	Chronic rheumatism, etc., Gout .. Diabetes .. Alcoholism .. Cerebral hemorrhage, etc. .. Other dis. of the nervous system ..	16— — — — —	20— — — — —	25— — — — —	35— — — — —	45— — — — —	55— — — — —	65— — — — —	70 and upwards.								
13 16 16 — 32	1 — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	13 16 16 — 32	Valvular disease of heart .. Other heart disease .. Arterio-sclerosis .. Other dis. of circulatory system .. Bronchitis ..	16— — — — —	20— — — — —	25— — — — —	35— — — — —	45— — — — —	55— — — — —	65— — — — —	70 and upwards.								
22 — 3 1 2	1 — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	22 — 3 1 2	Pneumonia .. Chronic interstitial pneumonia .. Other dis. of respiratory system .. Ulcer of stomach .. Ulcer of duodenum ..	16— — — — —	20— — — — —	25— — — — —	35— — — — —	45— — — — —	55— — — — —	65— — — — —	70 and upwards.								
— —<																									

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 104.—GAS STOKERS (693).

OCCUPATIONAL GROUP 105.—RAILWAY OFFICIALS, STATION MASTERS, ETC. (700).

[illegible]

All Causes—ages 20-65 years.

1,289

Deaths actually recorded per 100 which would have occurred at the

All Causes—ages 20-65 years

Deaths actually recorded per 100 which would have occurred at the comparative mortality figure (Standardized Death-rate)

OCCUPATIONAL GROUP 108.—RAILWAY SIGNALMEN (703).													OCCUPATIONAL GROUP 109.—SHUNTERS, POINTSMEN, AND LEVEL CROSSING MEN (704).																	
Numbers of Deaths at Ages—													Numbers of Deaths at Ages—																	
All Ages	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.					All Ages	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.							
16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.						16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.								
51	1	1	3	8	10	8	5	15	47	14	13	37	51	61	122	405	2	1	4	3	1	2	8	3	21	41	69	190		
63	5	8	18	11	10	9	—	2	233	111	79	52	51	69	—	54	10	19	28	11	—	—	81	66	150	112	46	—		
17	—	—	3	3	5	1	—	3	13	—	13	5	7	8	—	81	—	2	5	—	—	—	—	3	27	51	69	133		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
156	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
132	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
131	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
76	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
78	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
1,214	13	10	46	73	126	261	188	497	605	139	203	342	642	1989	4591	13414	6	43	93	118	100	54	149	242	346	633	1019	2376	14190	
93,942	2,148	7,206	22,713	21,342	19,614	13,119	4,095	3,705	Years of life (Census population × 3)	..	..	..	..	..	..	..	2,481	12,441	28,776	18,633	9,816	4,377	1,500	4,377	1,500	1,050	..	..
—	245	80	51	54	56	77	92	99	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	..	..	..	..	..	..	..	98	98	81	99	88	92	72	104	92	104	..	..
Comparative Mortality Figure (Standardized Death-rate)													Comparative Mortality Figure (Standardized Death-rate)													All Causes—ages 20-65 years.				
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males													Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males													914				
..													91				

OCCUPATIONAL GROUP 111.—LIVERY STABLE AND MOTOR GARAGE PROPRIETORS AND MANAGERS; HAULAGE CONTRACTORS (711-713).

Numbers of Deaths at Ages—								Mean Annual Death-rate per 100,000.									
All Ages 16 and upwards.		16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and up.
43	—	—	—	3	7	7	10	5	11	—	—	—	—	—	—	—	—
105	1	6	22	34	24	24	12	4	2	35	77	81	111	95	76	84	228
25	—	—	2	1	1	1	7	—	1	—	—	3	4	3	—	21	—
2	—	1	3	3	6	1	—	—	4	—	13	11	10	24	44	21	83
9	—	—	—	—	—	2	3	—	4	—	—	—	—	—	—	—	—
5	—	—	—	3	1	2	—	—	—	—	—	—	—	8	19	—	83
9	—	—	—	1	1	1	4	—	—	—	—	—	—	3	4	—	—
207	—	1	2	9	29	66	—	1	59	13	—	11	3	8	25	21	—
5	—	—	—	—	1	—	—	2	2	—	—	7	29	114	418	881	1222
6	—	—	—	—	—	—	1	—	5	—	—	—	—	—	6	—	104
5	—	—	—	—	—	1	3	—	—	—	—	—	—	—	19	21	—
13	—	—	—	—	3	3	6	—	2	—	—	—	—	—	38	42	41
42	—	—	—	—	4	4	12	—	13	—	—	—	13	16	57	252	269
136	—	—	2	5	20	47	25	37	37	—	—	7	16	79	297	524	767
12	—	—	—	—	—	3	3	1	5	—	—	—	—	—	12	19	21
21	—	—	—	1	5	3	3	3	9	—	—	4	—	—	20	19	63
110	—	—	1	2	1	1	—	—	—	—	—	—	—	—	—	—	186
36	—	—	1	2	6	8	22	13	66	—	—	7	7	32	32	84	249
100	—	—	2	—	—	—	5	4	12	—	—	4	4	7	139	273	1367
162	—	—	—	—	—	13	20	13	39	—	26	7	36	51	127	273	808
83	—	—	1	1	8	13	41	29	69	—	13	4	26	51	259	608	1429
3	—	—	—	—	7	7	15	9	51	—	—	—	3	28	95	189	1057
153	—	—	1	1	—	—	2	—	1	—	—	—	—	—	13	—	21
95	—	—	1	13	7	11	27	13	93	—	—	4	23	43	171	273	1927
—	—	—	1	—	18	17	13	11	22	—	13	48	59	67	82	231	456
26	—	—	—	2	—	—	—	—	—	—	—	—	16	12	25	42	207
12	—	—	—	2	3	2	3	1	10	—	—	7	10	8	19	21	21
8	—	—	—	1	1	2	4	—	—	—	—	4	3	8	25	—	—
15	—	—	2	1	2	4	4	1	1	—	—	—	7	16	25	21	21
7	—	—	—	—	—	—	1	1	4	—	26	4	3	6	21	83	83
8	—	—	—	2	1	—	1	—	2	—	—	—	7	3	8	6	41
19	—	—	—	—	3	3	8	3	2	—	—	—	10	12	51	63	41
26	—	—	—	3	4	2	4	2	11	—	—	11	13	8	25	42	228
4	—	—	1	—	1	—	—	—	13	—	—	—	3	4	—	21	21
67	—	—	—	—	1	8	20	11	25	—	—	7	3	32	127	231	518
29	—	—	—	—	—	—	5	4	20	—	—	—	—	—	32	84	414
17	—	—	—	—	—	2	4	5	6	—	—	—	—	8	25	105	124
108	—	—	—	—	—	—	—	3	105	—	—	—	—	—	—	63	2175
40	—	—	2	2	5	15	11	1	4	—	—	7	16	59	70	21	83
67	—	—	5	7	6	18	6	2	13	—	70	64	26	46	71	38	42
49	—	—	—	—	12	5	12	3	11	—	—	—	—	—	—	—	—
1,663	3	25	81	156	218	333	187	660	105	321	297	509	860	2107	3920	13673	—

OCCUPATIONAL GROUP 110.—RAILWAY PORTERS AND LAMPMEN (706).

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.						
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and up
98	2	11	10	13	24	17	6	15	6	25	14	28	71	91	123	436
382	21	66	96	94	64	35	5	1	5	65	148	137	199	189	188	103
24	4	8	5	2	4	1	—	—	—	12	18	7	4	12	5	—
55	—	—	4	15	23	9	—	—	—	—	2	6	32	68	21	58
4	—	—	2	—	—	—	—	—	—	—	3	—	—	—	—	—
12	—	—	—	2	6	4	—	—	—	—	—	—	4	18	22	—
27	—	1	2	13	10	1	—	—	—	2	3	28	29	5	—	—
12	—	—	—	—	5	—	—	2	—	—	15	15	22	21	58	—
288	1	3	11	17	74	89	47	46	1	3	7	36	218	479	966	1338
10	—	—	—	—	1	4	2	—	—	—	—	—	3	22	41	87
2	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	58
2	—	—	—	2	8	4	—	—	—	—	—	4	—	—	—	—
16	—	—	—	—	9	9	2	—	—	—	—	—	24	27	41	—
22	—	—	—	—	29	9	3	1	—	—	—	—	24	48	62	29
73	—	—	5	5	27	17	31	10	7	7	11	80	91	185	291	—
165	1	3	10	10	29	55	31	30	7	3	9	21	85	296	637	873
12	—	—	—	—	—	—	—	5	—	—	—	—	—	—	—	145
27	1	3	—	4	6	8	1	2	3	7	3	8	18	43	21	58
21	—	—	1	—	—	—	—	—	—	—	—	—	35	231	617	1425
139	—	3	6	17	15	16	30	49	9	7	1	36	44	86	185	175
75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
134	—	3	15	16	16	31	17	36	—	7	21	34	47	167	350	1047
178	2	6	12	13	27	33	53	53	6	13	17	28	80	178	658	1542
70	—	—	1	3	3	14	9	43	—	9	—	9	75	185	1251	—
6	—	—	2	—	2	—	—	—	—	—	3	—	—	5	—	—
203	—	1	10	10	24	49	27	82	—	2	14	21	71	264	555	2385
161	6	6	24	37	27	25	15	21	—	18	13	34	78	80	134	611
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
45	—	3	6	3	6	12	4	11	—	7	9	6	18	65	82	320
11	—	3	9	9	11	2	2	—	—	7	13	19	32	11	41	58
—	—	—	2	3	1	2	1	—	—	—	3	6	3	11	21	—
12	2	—	3	2	2	3	—	—	—	—	4	4	6	16	—	—
7	—	1	—	2	—	—	2	—	—	2	—	—	—	5	41	29
5	—	—	—	—	—	2	—	1	—	—	—	—	—	11	29	29
9	—	—	1	2	3	10	4	9	—	2	3	2	9	54	82	262
30	—	1	2	1	—	—	—	—	—	—	—	—	—	—	—	—
5	—	2	1	—	1	1	—	—	—	4	1	—	3	5	—	—
79	1	1	5	8	22	18	11	12	—	3	2	7	65	97	226	349
22	—	—	—	—	2	2	6	12	—	2	7	17	6	11	123	349
22	2	1	1	2	8	4	4	3	—	6	—	—	4	22	21	87
103	—	—	—	—	—	4	5	94	—	—	1	—	—	22	103	2734
33	1	3	4	10	3	5	5	2	—	3	7	6	21	9	27	103
123	12	16	21	18	23	15	6	12	—	37	36	30	68	81	123	—
98	5	9	22	17	16	14	5	10	—	—	—	—	—	—	—	—
2,492	63	151	276	320	421	474	255	532	194	338	393	678	1240	2550	5244	15474

All Causes—ages 20–65 years.
Comparative Mortality Figure (Standardized Death-rates actually recorded per 100 which would have rates for all Occupied and Retired Civilian Males

Comparative Mortality Figure (Standardized Death-rate)	1,023
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males	102

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 116.—GROOMS AND HORSE KEEPERS (725).										OCCUPATIONAL GROUP 117.—BARGEMEN AND BOATMEN (738).									
CAUSE OF DEATH.										Numbers of Deaths at Ages—									
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.										Mean Annual Death-rate per 100,000.									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and up.		All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and up.	
56	1	1	1	5	10	14	11	13	Influenza ..	54	1	2	5	4	15	10	6	11	
58	4	15	21	38	44	26	4	6	Respiratory tuberculosis ..	113	6	9	19	28	30	17	4	—	
13	2	1	2	6	12	6	1	—	Other tuberculosis ..	40	—	—	1	4	4	—	—	—	
44	—	—	—	10	21	6	—	—	Syphilis etc. ..	5	—	—	1	12	15	2	—	—	
—	—	—	—	—	—	—	—	—	Syphilis ..	—	—	—	—	—	2	—	—	—	
6	—	—	—	—	—	—	—	—	Tabs dorsalis ..	3	—	—	—	—	—	—	—	—	
21	—	—	—	—	—	—	—	—	General paralysis of insane ..	18	—	—	—	—	—	—	—	—	
13	—	—	—	—	—	—	—	—	Aneurysm ..	14	—	—	—	—	—	—	—	—	
290	—	—	—	—	—	—	—	—	Cancer, all sites ..	204	—	—	—	—	—	—	—	—	
10	—	—	—	—	—	—	—	—	Skin ..	16	—	—	—	—	—	—	—	—	
5	—	—	—	—	—	—	—	—	Lip ..	8	—	—	—	—	—	—	—	—	
20	—	—	—	—	—	—	—	—	Tongue ..	11	—	—	—	—	—	—	—	—	
25	—	—	—	—	—	—	—	—	Esophagus ..	17	—	—	—	—	—	—	—	—	
51	—	—	—	—	—	—	—	—	Stomach ..	43	—	—	—	—	—	—	—	—	
179	—	—	—	—	—	—	—	—	Other sites ..	109	—	—	—	—	—	—	—	—	
10	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..	8	—	—	—	—	—	—	—	—	
11	—	—	—	—	—	—	—	—	Diabetes ..	10	—	—	—	—	—	—	—	—	
143	—	—	—	—	—	—	—	—	Alcoholism ..	115	—	—	—	—	—	—	—	—	
63	—	—	—	—	—	—	—	—	Cerebral hemorrhage, etc. ..	34	1	2	3	3	10	28	15	59	
148	—	—	—	—	—	—	—	—	Other dis. of the nervous system ..	98	—	—	—	—	—	—	—	—	
156	—	—	—	—	—	—	—	—	Valvular disease of heart ..	126	—	—	—	—	—	—	—	—	
109	—	—	—	—	—	—	—	—	Other heart disease ..	73	—	—	—	—	—	—	—	—	
8	—	—	—	—	—	—	—	—	Arterio-sclerosis ..	3	—	—	—	—	—	—	—	—	
201	—	—	—	—	—	—	—	—	Other dis. of circulatory system ..	157	—	—	—	—	—	—	—	—	
151	—	—	—	—	—	—	—	—	Bronchitis ..	105	1	1	5	15	18	24	16	25	
31	—	—	—	—	—	—	—	—	Pneumonia ..	21	—	—	—	—	—	—	—	—	
12	—	—	—	—	—	—	—	—	Chronic interstitial pneumonia ..	11	—	—	—	—	—	—	—	—	
3	—	—	—	—	—	—	—	—	Other dis. of respiratory system ..	11	—	—	—	—	—	—	—	—	
1	—	—	—	—	—	—	—	—	Ulcer of stomach ..	5	—	—	—	—	—	—	—	—	
11	—	—	—	—	—	—	—	—	Ulcer of duodenum ..	7	—	—	—	—	—	—	—	—	
11	—	—	—	—	—	—	—	—	Appendicitis ..	13	—	—	—	—	—	—	—	—	
11	—	—	—	—	—	—	—	—	Hernia ..	4	—	—	—	—	—	—	—	—	
11	—	—	—	—	—	—	—	—	Intestinal obstruction ..	4	—	—	—	—	—	—	—	—	
11	—	—	—	—	—	—	—	—	Cirrhosis of liver ..	13	—	—	—	—	—	—	—	—	
11	—	—	—	—	—	—	—	—	Other dis. of digestive system ..	13	—	—	—	—	—	—	—	—	
11	—	—	—	—	—	—	—	—	Acute nephritis ..	4	—	—	—	—	—	—	—	—	
11	—	—	—	—	—	—	—	—	Chronic nephritis ..	44	—	—	—	—	—	—	—	—	
11	—	—	—	—	—	—	—	—	Diseases of the prostate ..	17	—	—	—	—	—	—	—	—	
11	—	—	—	—	—	—	—	—	Other genito-urinary diseases ..	27	—	—	—	—	—	—	—	—	
11	—	—	—	—	—	—	—	—	Old age ..	121	—	—	—	—	—	—	—	—	
11	—	—	—	—	—	—	—	—	Suicide ..	13	—	—	—	—	—	—	—	—	
11	—	—	—	—	—	—	—	—	Accident ..	113	19	10	15	23	20	11	6	9	
11	—	—	—	—	—	—	—	—	Other causes ..	44	2	2	4	6	6	6	4	14	
2,104	19	25	75	162	315	477	288	743	All causes ..	1,608	31	28	69	137	237	313	204	589	
117,351	9,186	9,898	21,864	24,819	23,439	17,259	5,982	4,914	Years of life (Census population x 3) ..	72,033	5,154	5,973	12,639	15,690	14,973	10,380	3,549	3,675	
—	84	72	86	102	116	107	96	111	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	—	243	133	137	137	137	117	115	118	
All Causes—ages 20-65 years.										All Causes—ages 20-65 years.									
Comparative Mortality Figure (Standardized Death-rate)										Comparative Mortality Figure (Standardized Death-rate)									
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males										Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males									
1,046										1,290									
106										128									

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 121.—MESSENGERS, HALL PORTERS, LIFT ATTENDANTS, ETC.
(757, 758, 917.)

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.										CAUSE OF DEATH.	Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		16—	20—	25—	35—	45—	55—	65—	70 and upwards.		All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.													
133	—	1	15	23	32	37	14	11	Influenza ..	10	1	5	5	10	9	7	7	54	Influenza ..	10	1	5	5	10	9	7	7	206												
836	13	40	83	231	274	147	30	18	Respiratory tuberculosis ..	20	34	42	41	42	35	7	6	287	Respiratory tuberculosis ..	20	34	42	41	42	35	7	6	167												
44	1	6	6	6	12	9	3	1	Other tuberculosis ..	22	5	3	3	5	3	2	3	36	Other tuberculosis ..	22	5	3	3	5	3	2	3	177												
151	—	—	8	45	49	34	12	3	Syphilis, etc. ..	1	—	—	—	17	8	1	1	41	Syphilis, etc. ..	1	—	—	—	17	8	1	1	48												
17	—	—	2	5	4	5	—	1	Syphilis ..	1	—	—	—	1	1	2	—	5	Syphilis ..	1	—	—	—	1	1	2	—	48												
18	—	—	—	3	10	3	2	—	Tabs dorsalis ..	—	—	—	—	2	3	—	—	6	Tabs dorsalis ..	—	—	—	—	2	3	—	—	29												
80	—	—	6	32	23	14	5	—	General paralysis of insane ..	—	—	—	—	31	2	—	—	14	General paralysis of insane ..	—	—	—	—	31	2	—	—	24												
86	—	—	—	5	12	12	—	2	Aneurysm ..	—	—	—	—	8	2	1	—	16	Aneurysm ..	—	—	—	—	8	2	1	—	14												
710	13	1	12	83	184	274	106	100	Cancer, all sites ..	4	1	2	10	36	86	40	44	223	Cancer, all sites ..	4	1	2	10	36	86	40	44	1294												
13	—	—	—	—	—	—	3	4	Skin ..	—	—	—	—	—	—	—	—	2	Skin ..	—	—	—	—	—	—	—	—	—												
5	—	—	—	—	—	—	—	3	Lip ..	—	—	—	—	—	—	—	—	1	Lip ..	—	—	—	—	—	—	—	—	—												
67	—	—	—	—	22	31	5	5	Tongue ..	—	—	—	—	1	3	1	—	8	Tongue ..	—	—	—	—	1	3	1	—	24												
48	—	—	—	—	1	22	11	5	Esophagus ..	—	—	—	—	8	11	3	—	28	Esophagus ..	—	—	—	—	8	11	3	—	71												
169	—	—	5	11	46	64	24	19	Stomach ..	4	1	2	4	23	17	26	8	43	Stomach ..	4	1	2	4	23	17	26	8	118												
408	—	1	7	16	102	153	63	66	Other sites ..	4	—	—	—	—	54	54	27	141	Other sites ..	4	—	—	—	—	54	54	27	375												
25	—	—	2	—	4	6	7	8	Chronic rheumatism, etc., Gout ..	—	—	—	—	—	1	2	1	4	Chronic rheumatism, etc., Gout ..	—	—	—	—	—	1	2	1	48												
21	1	1	2	2	8	1	3	—	Diabetes ..	1	—	1	1	—	—	4	—	9	Diabetes ..	1	—	1	1	—	—	4	—	29												
4	—	—	3	18	29	39	1	84	Alcoholism ..	—	—	—	—	10	20	12	—	31	Alcoholism ..	—	—	—	—	10	20	12	—	95												
287	1	2	13	27	39	27	32	8	Cerebral hemorrhage, etc. ..	13	7	5	3	12	12	3	3	77	Cerebral hemorrhage, etc. ..	13	7	5	3	12	12	3	3	138												
119	1	2	13	27	39	27	32	8	Other dis. of the nervous system ..	13	7	5	3	10	20	12	3	57	Other dis. of the nervous system ..	13	7	5	3	10	20	12	3	286												
317	1	3	14	34	67	110	39	49	Valvular disease of heart ..	10	4	10	9	26	36	20	19	134	Valvular disease of heart ..	10	4	10	9	26	36	20	19	250												
417	1	2	11	35	78	126	56	70	Other heart disease ..	16	4	3	2	16	34	21	37	217	Other heart disease ..	16	4	3	2	16	34	21	37	309												
218	—	1	2	11	35	78	126	56	Arterio-sclerosis ..	17	4	3	6	16	34	21	37	218	Arterio-sclerosis ..	17	4	3	6	16	34	21	37	309												
8	—	—	3	—	—	—	—	4	Other dis. of circulatory system ..	3	—	—	—	3	11	14	25	57	Other dis. of circulatory system ..	3	—	—	—	3	11	14	25	735												
618	1	1	8	36	113	183	107	170	Branchitis ..	1	—	2	4	14	21	21	55	118	Branchitis ..	1	—	2	4	14	21	21	55	24												
558	3	13	37	107	140	141	51	66	Pneumonia ..	15	8	10	16	20	35	19	17	140	Pneumonia ..	15	8	10	16	20	35	19	17	146												
4	—	2	5	11	28	23	3	14	Chronic interstitial pneumonia ..	3	—	—	—	5	5	2	5	24	Chronic interstitial pneumonia ..	3	—	—	—	5	5	2	5	453												
86	—	—	—	10	25	10	5	—	Other dis. of respiratory system ..	3	—	—	1	8	3	35	—	24	Other dis. of respiratory system ..	3	—	—	1	8	3	35	48													
51	1	1	1	11	5	5	2	—	Ulcer of stomach ..	1	1	1	6	6	3	2	2	21	Ulcer of stomach ..	1	1	1	6	6	3	2	2	29												
25	—	—	—	—	—	—	—	—	Ulcer of duodenum ..	—	—	—	—	—	2	1	—	5	Ulcer of duodenum ..	—	—	—	—	—	2	1	—	48												
15	—	1	4	2	3	3	3	—	Appendicitis ..	8	1	1	—	—	—	1	—	11	Appendicitis ..	8	1	1	—	—	—	1	—	24												
25	—	—	1	6	2	6	4	6	Hernia ..	2	—	9	3	15	37	7	7	111	Hernia ..	2	—	9	3	15	37	7	7	59												
26	—	—	—	3	4	14	1	4	Intestinal obstruction ..	2	—	4	6	34	9	1	3	12	Intestinal obstruction ..	2	—	4	6	34	9	1	3	88												
45	—	—	1	4	12	17	8	3	Cirrhosis of liver ..	2	6	17	42	74	55	4	2	12	Cirrhosis of liver ..	2	6	17	42	74	55	4	2	24												
74	1	2	3	10	21	30	4	14	Other dis. of digestive system ..	10	6	15	30	46	37	259	31	12	Other dis. of digestive system ..	10	6	15	30	46	37	259	31	12												
15	—	—	1	5	4	4	1	—	Acute nephritis ..	—	—	2	7	6	10	9	—	1	Acute nephritis ..	—	—	—	—	1	—	—	—	5												
154	—	2	7	13	41	44	20	27	Chronic nephritis ..	2	1	13	19	58	108	184	37	37	Chronic nephritis ..	2	1	13	19	58	108	184	37	71												
26	—	—	—	8	—	8	—	12	Diseases of the prostate ..	—	—	2	20	25	221	9	9	20	Diseases of the prostate ..	—	—	—	—	2	20	25	221	147												
70	—	2	1	8	15	19	11	14	Other genito-urinary diseases ..	10	—	12	21	46	101	258	16	16	Other genito-urinary diseases ..	10	—	—	—	15	19	11	14	71												
182	—	—	—	—	—	12	18	152	Old age ..	—	—	—	29	166	2802	—	35	35	Old age ..	—	—	—	—	—	2	1	—	941												
76	—	2	7	17	25	17	6	2	Suicide ..	5	—	25	35	42	55	37	29	29	Suicide ..	5	—	—	2	9	6	4	95													
217	4	8	23	49	57	44	17	15	Accident ..	42	10	7	81	108	157	277	78	78	Accident ..	42	10	7	81	108	157	277	9	265												
153	5	3	14	25	34	44	12	16	Other causes ..	25	9	4	5	8	7	9	75	Other causes ..	25	9	4	5	8	7	9	8	71													
5,710	32	94	282	781	1,321	1,521	671	1,008	All causes	256	86	103	139	273	375	216	333	All causes	256	86	103	139	273	375	216	333	26,075													
																												9797												

All Causes—ages 20–65 years.	
Comparative Mortality Figure (Standardized Death-rate)	1,532
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males	153

OCCUPATIONAL GROUP 123.—PROPRIETORS AND MANAGERS OF WHOLESALE OR RETAIL DEALING BUSINESSES (770).

[illegible]

All Causes—ages 20-65 years.
Comparative Mortality Figure (Standardized Death-rates actually recorded per 100 which would have occurred for all Occupied and Retired Civilian Males.

All Causes—ages 20–65 years.	1,497
Comparative Mortality Figure (Standardized Death-rate)	.. ..
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males	148

OCCUPATIONAL GROUP 124.—SALEMEN AND SHOP ASSISTANTS (775).

CAUSE OF DEATH.

For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.

OCCUPATIONAL GROUP 123.—PROPRIETORS AND MANAGERS OF BUSINESSES FOR THE SALE OF TEXTILES AND CLOTHING (Occ. 770. Ind. 635-6).

Mean Annual Death-rate per 100,000.

Numbers of Deaths at Ages—

Mean Annual Death-rate per 100,000.

All Ages 16 and upwards.	Causes of Death, see page 1.							70 and upwards.	65—	55—	45—	35—	25—	20—	16—	All Ages 16 and upwards.							
	16—	20—	25—	35—	45—	55—	65—																
95 175 24 45	—	—	—	—	—	—	—	201	24	12	27	35	36	13	15	15							
175	1	3	6	11	16	22	27	1,175	144	223	299	242	157	22	9	3							
24	1	2	—	—	—	—	—	144	46	25	28	19	16	4	2	3							
45	—	—	—	—	—	—	—	129	—	2	9	40	45	23	10	—							
—	—	—	—	—	—	—	—	10	—	1	2	3	2	1	1	—							
—	—	—	—	—	—	—	—	23	—	—	—	2	7	8	6	—							
22	—	—	—	—	—	—	—	77	—	—	7	33	25	9	2	—							
364	—	—	—	—	—	—	—	19	—	—	—	11	11	5	1	—							
9	—	—	—	—	—	—	—	640	4	10	27	49	138	196	139	8							
—	—	—	—	—	—	—	—	22	—	1	1	1	5	5	1	—							
—	—	—	—	—	—	—	—	3	—	—	—	—	1	—	2	—							
12	—	—	—	—	—	—	—	27	—	—	—	—	12	—	16	—							
19	—	—	—	—	—	—	—	57	—	—	—	—	17	—	7	—							
87	—	—	—	—	—	—	—	132	—	—	7	14	27	46	23	—							
237	—	—	—	—	—	—	—	399	4	9	19	33	81	110	53	90							
14	—	—	—	—	—	—	—	22	—	—	2	1	1	3	5	10							
38	—	—	—	—	—	—	—	105	12	10	16	15	14	24	8	6							
4	—	—	—	—	—	—	—	4	—	—	—	—	3	—	—	—							
286	—	—	—	—	—	—	—	334	1	3	14	16	45	82	46	127							
83	—	—	—	—	—	—	—	220	24	20	37	31	38	32	12	26							
193	—	—	—	—	—	—	—	420	27	33	46	51	80	84	35	64							
332	—	—	—	—	—	—	—	442	15	17	50	52	52	107	54	95							
186	—	—	—	—	—	—	—	185	—	—	1	4	19	41	35	85							
18	—	—	—	—	—	—	—	21	2	1	1	3	3	7	4	—							
189	—	—	—	—	—	—	—	356	2	3	14	28	51	83	38	137							
177	—	—	—	—	—	—	—	435	42	26	69	76	96	56	23	48							
4	—	—	—	—	—	—	—	7	—	—	—	2	2	2	2	—							
50	—	—	—	—	—	—	—	70	5	1	7	14	8	13	12	10							
12	—	—	—	—	—	—	—	41	1	3	6	14	11	4	2	—							
8	—	—	—	—	—	—	—	22	1	2	3	4	6	4	2	—							
—	—	—	—	—	—	—	—	66	18	17	20	3	5	3	—	—							
11	—	—	—	—	—	—	—	22	1	2	2	4	5	2	—	—							
21	—	—	—	—	—	—	—	31	6	4	6	4	1	2	3	—							
30	—	—	—	—	—	—	—	53	—	—	1	6	14	19	7	6							
39	—	—	—	—	—	—	—	92	7	7	8	13	16	18	5	18							
89	—	—	—	—	—	—	—	27	4	7	2	3	5	4	1	1							
5	—	—	—	—	—	—	—	189	11	10	15	20	31	52	17	33							
141	—	—	—	—	—	—	—	47	—	—	—	—	—	6	7	15							
66	—	—	—	—	—	—	—	68	—	—	—	—	—	10	4	25							
32	—	—	—	—	—	—	—	193	—	—	—	—	—	18	5	170							
191	—	—	—	—	—	—	—	128	10	11	14	28	31	20	5	9							
60	—	—	—	—	—	—	—	208	40	31	46	26	23	22	15	15							
115	—	—	—	—	—	—	—	307	57	28	58	51	37	44	10	22							
3,113	5	13	84	224	407	634	409	1,337	556	322	352	585	1,033	2,586	5,040	14,198	483	366	658	1,156	2,433	4,037	11,701

148,533	900	4,035	23,838	38,304	39,405	24,519	8,115	9,417	868,662	201,684	154,782	227,628	131,229	87,219	44,661	11,964	9,495
—	225	91	88	92	89	101	101	105	—	101	93	92	103	100	95	81	86
All Causes—ages 20-65 years.																	
Comparative Mortality Figure (Standardized Death-rate)																	
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																	
941																	
95																	
All Causes—ages 20-65 years.																	
Comparative Mortality Figure (Standardized Death-rate)																	
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																	
973																	
97																	

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

[illegible]

OCCUPATIONAL GROUP 124c.—SALESMEN AND SHOP ASSISTANTS IN BUSINESSES FOR THE SALE OF TEXTILES AND CLOTHING (Occ. 775, Ind. 635-6).

OCCUPATIONAL GROUP 125.—COMMERCIAL TRAVELLERS (773).

Mean Annual Death-rate per 100,000.										Mean Annual Death-rate per 100,000.									
Numbers of Deaths at Ages—										Numbers of Deaths at Ages—									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	70 and up.	All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	70 and up.
27	2	1	3	7	2	5	3	4	292	102	2	6	11	14	19	17	9	26	341
197	27	38	49	39	30	15	5	2	146	33	26	26	88	107	92	39	10	379	111
22	3	5	3	6	6	17	1	1	73	23	—	—	8	6	3	4	2	—	129
14	—	—	—	—	—	29	—	—	53	115	—	—	2	23	52	23	9	6	13
—	—	—	—	—	—	—	—	—	—	11	—	—	1	3	4	2	—	—	25
2	—	—	—	—	—	—	—	—	—	31	—	—	—	—	—	—	—	—	76
10	—	—	—	—	—	—	—	—	—	56	—	—	—	—	—	—	—	—	11
9	—	—	—	—	—	—	—	—	—	17	—	—	—	—	—	—	—	—	7
116	—	—	—	—	—	—	—	—	—	559	—	—	—	—	—	—	—	—	68
8	—	—	—	—	—	—	—	—	—	11	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—	—	27	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	63	—	—	—	—	—	—	—	—	—
24	—	—	—	—	—	—	—	—	—	32	—	—	—	—	—	—	—	—	—
73	—	—	—	—	—	—	—	—	—	94	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—	15	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	—	63	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	4	—	—	—	—	—	—	—	—	—
44	—	—	—	—	—	—	—	—	—	284	—	—	—	—	—	—	—	—	—
40	—	—	—	—	—	—	—	—	—	97	—	—	—	—	—	—	—	—	—
61	2	4	5	8	10	16	46	88	212	267	—	—	—	—	—	—	—	—	—
68	—	—	—	—	—	—	—	—	—	372	—	—	—	—	—	—	—	—	—
30	—	—	—	—	—	—	—	—	—	197	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	12	—	—	—	—	—	—	—	—	—
56	—	—	—	—	—	—	—	—	—	190	—	—	—	—	—	—	—	—	—
50	5	3	9	7	17	13	3	3	219	247	1	7	26	37	57	53	29	37	486
2	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
12	—	—	—	—	—	—	—	—	—	52	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—	23	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	18	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	45	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	17	—	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—	—	19	—	—	—	—	—	—	—	—	—
17	—	—	—	—	—	—	—	—	—	61	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	—	83	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	14	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—	147	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	—	72	—	—	—	—	—	—	—	—	—
11	—	—	—	—	—	—	—	—	—	57	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	—	165	—	—	—	—	—	—	—	—	—
18	—	—	—	—	—	—	—	—	—	90	—	—	—	—	—	—	—	—	—
36	—	—	—	—	—	—	—	—	—	133	—	—	—	—	—	—	—	—	—
45	—	—	—	—	—	—	—	—	—	136	—	—	—	—	—	—	—	—	—
977	60	75	126	126	152	172	69	197	288	4,053	5	76	253	408	724	895	507	1,185	15,557
111,138	20,823	31,512	17,280	11,681	6,606	1,887	1,371	1,371	250,497	250,497	4,644	19,308	69,736	63,261	54,603	30,228	8,100	7,617	—
—	117	106	100	114	113	101	73	106	—	—	44	112	101	101	115	115	125	115	—

CAUSE OF DEATH.
For the precise significance of each title and its relation to the international list of Causes of Death, see page 1.

Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 126.—CANVASSERS, ROUNDSMEN, AND VAN SALESMEN (774, 776).														CAUSE OF DEATH.														OCCUPATIONAL GROUP 127.—COSTERMONGERS, HAWKERS, AND STREET SELLERS (777, 778).													
Mean Annual Death-rate per 100,000.														For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.														Mean Annual Death-rate per 100,000.													
Numbers of Deaths at Ages—																												Numbers of Deaths at Ages—													
All Ages and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.															16—	20—	25—	35—	45—	55—	65—	70 and upwards.											
28	2	3	5	7	3	5	1	2	Influenza ..	72	2	—	8	9	13	17	6	17	13	13	—	28	29	46	86	71	230														
17	17	19	48	31	15	9	2	3	Respiratory tuberculosis ..	474	18	22	74	133	126	67	21	13	120	186	264	425	442	341	249	176															
14	4	2	2	2	6	—	—	1	Other tuberculosis ..	35	9	6	5	5	4	6	2	3	60	51	18	16	14	10	12	41															
11	—	—	—	5	—	—	—	—	Syphilis, etc. ..	84	—	—	5	22	27	20	6	—	—	18	70	95	102	71	54	—															
18	—	—	—	10	—	—	—	—	Syphilis ..	10	—	—	3	1	—	—	—	—	—	11	3	7	20	—	—	—															
5	—	—	—	—	—	—	—	—	Tabes dorsalis ..	18	—	—	—	2	7	5	3	1	—	—	6	25	25	36	14	—															
5	—	—	—	—	—	—	—	—	General paralysis of insane ..	32	—	—	2	15	12	—	—	—	—	7	48	42	15	—	—	—															
5	—	—	—	—	—	—	—	—	Aneurysm ..	32	—	—	—	4	6	8	—	—	—	13	21	41	36	4	—	—															
85	1	4	2	11	27	20	7	13	Cancer, all sites ..	363	—	1	5	13	70	104	88	82	—	8	18	42	245	529	1042	111	81														
2	—	—	—	—	—	—	—	—	Skin ..	10	—	—	—	—	—	3	—	6	—	—	—	—	15	12	—	—															
2	—	—	—	—	—	—	—	—	Lip ..	7	—	—	—	—	2	1	1	3	—	—	—	—	7	5	12	41															
1	—	—	—	—	—	—	—	—	Tongue ..	32	—	—	—	—	9	6	8	—	—	—	—	—	32	46	71	108	8														
10	—	—	—	—	—	—	—	—	Esophagus ..	26	—	—	—	4	7	9	4	—	—	—	—	—	21	36	107	54	10														
25	—	—	—	—	—	—	—	—	Stomach ..	81	—	—	1	9	20	23	203	15	—	13	70	117	213	203	203	203															
45	1	4	2	7	13	13	2	6	Other sites ..	207	—	1	4	33	61	53	—	46	—	8	14	29	116	310	627	623															
2	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..	10	—	—	—	1	1	4	—	4	—	—	—	—	3	4	20	—	—														
2	—	—	—	—	—	—	—	—	Diabetes ..	23	—	—	—	2	4	—	2	6	—	7	—	—	6	14	36	24	81														
—	—	—	—	—	—	—	—	—	Alcoholism ..	4	—	—	—	2	4	1	—	—	—	—	—	—	6	4	5	—	—														
30	1	—	—	—	—	—	—	—	Cerebral hemorrhage, etc. ..	162	—	—	1	12	22	13	36	68	—	—	—	4	13	42	209	426	921														
21	3	4	2	3	4	4	1	—	Other dis. of the nervous system ..	89	4	—	11	12	22	13	—	15	27	—	39	38	77	66	142	203															
53	5	4	9	9	8	11	3	4	Valvular disease of heart ..	179	5	7	15	17	29	39	33	34	33	59	53	54	102	198	391	461															
59	2	4	5	6	2	12	2	3	Other heart disease ..	313	1	1	5	28	41	58	52	127	7	8	18	89	144	295	616	1720															
12	—	—	—	—	—	—	—	—	Arterio-sclerosis ..	165	—	—	—	3	11	26	27	98	—	10	39	132	320	1327	1327	1327															
—	—	—	—	—	—	—	—	—	Other dis. of circulatory system ..	4	—	—	—	—	—	—	—	5	—	8	—	—	—	—	—	—															
44	—	2	2	2	4	12	6	16	Bronchitis..	415	—	—	4	17	50	96	69	179	—	14	54	175	488	817	2424	2424															
56	2	3	9	11	11	10	6	4	Pneumonia ..	297	8	5	22	51	62	58	37	54	53	42	78	163	217	295	438	731															
—	—	—	—	—	—	—	—	—	Chronic interstitial pneumonia ..	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—															
15	—	—	—	—	—	—	—	—	Other dis. of respiratory system ..	57	—	—	5	8	10	11	8	15	—	18	26	35	56	95	203	203															
10	—	1	1	2	3	1	2	1	Uler of stomach ..	20	—	—	1	7	6	3	1	1	—	8	4	22	21	12	14	14															
4	2	—	1	1	—	—	—	—	Uler of duodenum ..	6	—	—	1	1	1	1	1	1	—	8	—	3	4	5	12	14															
3	2	—	—	—	—	—	—	—	Appendicitis ..	10	1	—	2	1	3	—	2	1	7	—	7	3	11	—	24	14															
3	—	—	—	—	—	—	—	—	Hernia ..	7	—	—	—	—	1	1	—	2	—	—	—	3	4	15	—	27															
3	—	—	—	—	—	—	—	—	Intestinal obstruction ..	13	—	—	4	2	2	1	—	3	—	8	14	6	7	5	—	41															
4	—	—	—	—	—	—	—	—	Cirrhosis of liver ..	22	—	—	—	2	5	12	—	2	—	6	18	61	18	12	27	149															
4	—	—	—	—	—	—	—	—	Other dis. of digestive system ..	44	1	1	—	6	10	10	5	11	7	8	—	19	35	51	59	149															
3	—	—	—	—	—	—	—	—	Acute nephritis ..	12	1	—	3	1	2	—	4	1	7	—	11	3	7	—	47	14															
22	—	—	—	—	—	—	—	—	Chronic nephritis..	118	2	1	2	12	14	35	22	30	13	8	7	38	49	178	260	406															
11	—	—	—	—	—	—	—	—	Diseases of the prostate ..	28	—	—	—	1	1	4	5	17	—	3	4	20	59	230	230	230															
20	—	—	—	—	—	—	—	—	Other genito-urinary diseases ..	45	—	—	1	7	6	11	—	6	—	8	4	22	21	56	71	178															
—	—	—	—	—	—	—	—	—	Old age ..	219	—	—	—	—	—	11	28	180	—	—	—	—	56	331	2438	2438															
16	—	—	—	—	—	—	—	—	Suicide ..	49	—	—	3	11	17	6	4	8	—	11	35	60	31	47	108	108															
33	5	6	6	7	4	6	—	4	Accident ..	124	6	5	9	17	23	28	13	25	40	42	32	54	81	132	154	—															
—	—	—	—	—	—	—	—	—	All causes ..	117	8	4	7	8	18	29	18	25	—	—	—	—	—	—	—	—	—														
755	54	60	114	123	127	118	55	104	All causes ..	3,581	67	58	193	404	594	717	508	1,040	448	490	687	1291	2081	3647	6013	14086															
														Years of life (Census population × 3)														150,201													
														Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.														14,961													
																												181													
																												139													
																												172													
																												202													
																												180													
																												19,662													
																												28,539													
																												31,302													
																												8,448													
																												7,383													
																												104													
																												1,680													
																												Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males													
																												All Causes—ages 20-65 years.													
																												Comparative Mortality Figure (Standardized Death-rate)													
																												1,680													
																												Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males													
																												1,680													
																												85													

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 129.—INSURANCE OFFICIALS (793).

[illegible]

Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the
rates for all Occupied and Retired Civilian Males

Comparative Mortality Figure (Standardized Death-rates actually recorded per 100 which would have occurred for all Occupied and Retired Civilian Males . . .

Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the
rates for all Occupied and Retired Civilian Males

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

[illegible]

OCCUPATIONAL GROUP 133.—LOCAL AUTHORITY OFFICIALS AND CLERKS (805).

All Ages 16 and upwards.		Numbers of Deaths at Ages—							Mean Annual Death-rate per 100,000.							
		16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and up.
73	1	3	6	16	6	17	1	23	8	15	14	41	18	73	15	306
196	10	30	53	36	37	24	5	1	81	149	128	92	110	103	76	13
26	3	3	5	6	5	4	2	—	24	15	12	15	15	17	—	—
32	—	—	1	7	10	9	1	3	—	—	2	18	30	38	30	40
4	—	—	—	1	2	1	—	—	—	—	—	3	6	4	—	—
12	—	—	—	4	3	2	1	2	—	—	—	10	9	9	15	27
6	—	—	1	2	2	1	1	1	—	—	2	5	9	4	15	13
10	—	—	—	2	3	5	—	—	—	5	7	23	152	359	892	999
282	—	1	3	9	51	84	59	3	—	—	—	—	—	4	—	40
4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18	—	—	1	1	—	6	2	8	—	—	2	3	6	26	30	80
15	—	—	—	—	—	7	7	5	8	—	—	—	—	30	30	66
48	—	—	—	1	11	16	10	10	—	—	—	3	33	68	151	133
197	—	1	2	7	37	54	45	51	—	5	5	18	110	231	680	678
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	1	6	2	5	—	—	—	—	3	26	30	68
38	—	—	1	3	9	8	7	10	—	2	2	8	27	34	106	133
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
196	—	—	—	3	19	45	32	97	—	12	12	10	24	68	106	279
61	—	—	5	4	8	16	7	21	—	—	—	—	—	—	—	—
140	3	—	5	7	15	35	23	52	24	—	12	18	45	150	348	691
200	1	1	3	4	17	53	39	82	8	5	7	10	51	226	590	1089
108	—	—	—	6	6	22	19	61	—	—	—	18	94	287	810	189
12	—	—	—	1	3	3	3	2	—	—	3	9	13	45	27	27
103	—	—	2	1	6	21	11	62	—	—	5	3	18	90	166	824
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
123	1	2	9	17	20	26	14	34	8	10	22	44	60	111	212	452
2	—	—	—	1	4	9	2	13	—	—	3	3	5	12	38	30
34	—	1	2	3	4	—	—	—	8	5	5	5	8	6	47	13
19	—	—	2	3	6	11	2	2	—	—	10	3	18	13	30	27
18	—	—	4	1	6	—	—	—	—	—	—	—	—	—	—	—
19	—	—	5	2	2	6	—	2	—	10	12	5	6	26	—	27
19	—	—	—	—	—	—	—	4	—	—	—	—	—	—	—	53
4	—	—	—	—	—	—	—	1	—	—	5	2	3	17	15	13
9	—	1	1	1	—	4	—	—	—	—	—	—	—	12	38	76
21	—	—	—	—	7	9	6	14	—	10	—	10	21	38	91	186
42	—	2	—	4	7	9	6	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10	—	—	1	1	3	3	1	1	—	—	2	3	9	13	15	13
98	—	—	3	5	19	25	15	29	—	10	7	13	3	57	107	227
46	—	—	—	—	1	6	9	30	—	—	—	—	—	3	26	136
25	—	—	1	—	5	—	4	1	—	—	—	—	—	15	17	15
116	—	—	—	—	—	1	—	111	—	—	—	—	—	4	60	1475
36	—	—	4	6	12	11	2	1	—	—	—	10	15	36	47	30
16	2	1	6	7	14	9	10	6	16	5	14	18	42	38	—	—
86	2	—	7	17	16	14	—	20	—	—	—	—	—	—	—	—
2,234	24	49	129	164	309	497	282	780	194	244	311	421	920	2123	4263	10363

OCCUPATIONAL GROUP 132.--CIVIL SERVICE OFFICIALS AND CLERKS (800).

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.							
All Ages 16 and upwards,		16—	20—	25—	35—	45—	55—	65—	70 and upwards,	16—	20—	25—	35—	45—	55—	65—	70 and up.
114	—	3	17	15	15	19	35	10	35	137	113	124	120	126	50	102	298
437	13	69	140	94	74	36	6	6	5	137	113	124	120	126	95	61	43
33	3	11	5	5	3	3	—	9	1	21	5	10	6	14	8	9	9
69	2	1	2	11	22	16	16	9	8	—	2	2	14	38	42	92	68
9	—	—	1	3	2	2	—	—	—	—	—	—	1	4	5	10	—
10	—	—	—	1	2	4	4	2	—	—	—	—	—	—	—	—	—
22	—	1	1	6	8	3	3	2	—	—	—	—	1	8	11	31	—
28	—	—	—	10	7	4	—	—	7	—	—	—	1	17	18	31	—
31	—	—	—	8	12	3	—	—	3	—	—	—	5	24	49	60	—
490	—	2	6	19	87	165	65	65	146	—	3	5	24	149	498	664	1242
10	—	—	—	—	1	2	1	1	6	—	—	—	—	—	2	8	51
4	—	—	—	—	—	—	—	1	3	—	—	—	—	—	—	10	26
19	—	—	—	—	—	—	—	4	3	—	—	—	—	—	—	—	28
32	—	—	—	—	—	—	—	8	4	—	—	—	—	7	21	41	68
75	—	—	—	—	—	—	—	12	10	—	—	—	9	27	32	41	179
350	—	2	6	12	58	22	21	10	21	—	3	5	15	99	322	460	894
16	—	—	—	—	—	—	—	45	105	—	—	—	—	—	—	—	—
58	—	—	—	—	—	—	—	3	6	—	—	—	1	8	11	31	51
5	—	—	—	—	—	—	—	5	17	—	—	—	6	4	12	50	145
242	—	—	—	—	—	—	—	1	3	—	—	—	5	4	38	106	347
104	1	5	14	11	29	11	34	22	137	—	8	12	14	19	77	117	1166
205	—	—	—	—	—	—	—	11	22	—	—	—	—	—	—	—	—
355	—	2	13	12	30	59	27	62	67	—	—	—	3	12	15	51	156
194	—	6	14	17	46	73	52	147	147	—	—	—	10	12	22	79	193
8	—	—	—	4	9	39	23	119	119	—	—	—	5	15	19	531	1251
180	—	1	—	—	—	—	4	2	2	—	—	—	2	—	—	103	236
191	—	1	3	6	20	26	15	1	109	—	—	—	2	3	8	69	153
53	—	13	21	18	38	39	15	47	47	—	—	—	21	19	23	65	103
30	—	—	—	—	—	—	—	—	—	—	—	—	2	2	32	41	119
23	—	—	—	—	—	—	—	—	14	—	—	—	1	10	22	8	61
28	—	—	—	—	—	—	—	—	2	—	—	—	2	6	12	8	17
18	—	3	4	12	2	3	1	3	2	—	—	—	5	4	3	8	10
32	—	—	—	3	2	2	2	2	11	—	—	—	—	3	5	20	94
28	—	1	2	3	1	8	4	4	13	—	—	—	2	4	21	41	111
68	—	—	6	7	7	8	4	2	16	—	—	—	4	12	21	41	51
12	—	—	—	—	—	24	2	2	22	—	—	—	5	9	10	63	20
136	—	—	4	1	4	2	—	—	1	—	—	—	4	1	7	5	9
61	1	—	—	9	19	35	17	—	48	—	—	—	3	4	12	32	92
41	—	—	—	—	—	9	13	13	39	—	—	—	6	—	24	133	408
180	—	—	—	—	—	5	9	8	21	—	—	—	4	3	13	41	332
61	—	—	—	—	—	2	5	4	4	—	—	—	—	—	5	82	1447
86	—	—	—	—	—	8	2	8	170	—	—	—	—	—	—	—	—
152	3	6	23	20	19	15	11	4	4	—	5	10	17	26	29	41	34
3,711	22	131	343	321	514	757	370	1,253	232	215	305	411	878	1998	3779	10663	111

All Causes—ages 20–65 years.

Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the
rates for all Occupied and Retired Civilian Males

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 134.—CLERGYMEN (ANGLICAN CHURCH) (820).													OCCUPATIONAL GROUP 135.—ROMAN CATHOLIC PRIESTS; MONKS (821).																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
CAUSE OF DEATH.													Numbers of Deaths at Ages—																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.													Mean Annual Death-rate per 100,000.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
57	37	4	10	1	5	3	183	2	53	28	11	57	109	358	Influenza ..	5	1	1	53	41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—</

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23:

[illegible]

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 140.—DENTISTS (841).											OCCUPATIONAL GROUP 141.—TEACHERS (NOT MUSIC TEACHERS) (850).										
Numbers of Deaths at Ages—											Numbers of Deaths at Ages—										
Mean Annual Death-rate per 100,000.											Mean Annual Death-rate per 100,000.										
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.			All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		
7	—	—	—	—	2	25	38	37	—	236	102	1	2	14	19	14	28	8	16	18	18
31	—	—	—	—	1	73	94	140	153	118	186	5	18	48	43	37	22	8	5	91	91
1	—	—	—	—	—	—	12	57	37	120	20	—	2	7	5	3	1	1	1	—	—
6	—	—	—	—	—	—	—	—	—	—	32	—	—	—	—	—	—	3	5	—	—
—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—	—	10	—	—	—	—	—	—	—	2	—	—
4	—	—	—	—	—	—	—	—	—	—	12	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	9	—	—	—	—	—	—	—	3	—	—
32	—	—	—	—	—	—	—	—	—	946	349	—	2	6	18	53	127	56	87	21	21
—	—	—	—	—	—	—	—	—	—	—	6	—	—	—	—	—	—	—	1	—	—
—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—	—	14	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	—	22	—	—	—	—	—	—	—	5	—	—
4	—	—	—	—	—	—	—	—	—	—	70	—	—	—	—	—	—	—	6	—	—
23	—	—	—	—	—	—	—	—	—	827	235	—	2	4	10	39	88	33	59	21	21
—	—	—	—	—	—	—	—	—	—	—	8	—	—	—	—	—	—	—	3	—	—
3	—	—	—	—	—	—	—	—	—	—	42	—	—	—	—	—	—	—	10	—	—
9	—	—	—	—	—	—	—	—	—	—	218	—	—	—	—	—	—	—	7	—	—
19	—	—	—	—	—	—	—	—	—	—	100	—	—	—	—	—	—	—	10	—	—
25	—	—	—	—	—	—	—	—	—	—	171	—	—	—	—	—	—	—	20	—	—
18	—	—	—	—	—	—	—	—	—	—	292	—	—	—	—	—	—	—	110	—	—
2	—	—	—	—	—	—	—	—	—	—	136	—	—	—	—	—	—	—	25	—	—
16	—	—	—	—	—	—	—	—	—	—	96	—	—	—	—	—	—	—	11	—	—
—	—	—	—	—	—	—	—	—	—	—	144	3	2	14	22	20	37	16	30	55	55
27	—	—	—	—	—	—	—	—	—	—	42	—	—	—	—	—	—	—	10	—	—
5	—	—	—	—	—	—	—	—	—	—	21	—	—	—	—	—	—	—	4	—	—
4	—	—	—	—	—	—	—	—	—	—	11	—	—	—	—	—	—	—	1	—	—
1	—	—	—	—	—	—	—	—	—	—	20	2	1	7	2	3	4	—	1	36	11
3	—	—	—	—	—	—	—	—	—	—	27	—	—	—	—	—	—	—	6	—	—
4	—	—	—	—	—	—	—	—	—	—	15	—	—	—	—	—	—	—	3	—	—
10	—	—	—	—	—	—	—	—	—	—	64	—	—	—	—	—	—	—	21	—	—
—	—	—	—	—	—	—	—	—	—	—	7	—	—	—	—	—	—	—	1	—	—
16	—	—	—	—	—	—	—	—	—	—	90	—	—	—	—	—	—	—	1	—	—
2	—	—	—	—	—	—	—	—	—	—	61	—	—	—	—	—	—	—	19	—	—
3	—	—	—	—	—	—	—	—	—	—	31	—	—	—	—	—	—	—	40	—	—
13	—	—	—	—	—	—	—	—	—	—	144	—	—	—	—	—	—	—	16	—	—
11	—	—	—	—	—	—	—	—	—	—	53	—	—	—	—	—	—	—	4	—	—
14	—	—	—	—	—	—	—	—	—	—	62	—	—	—	—	—	—	—	8	—	—
13	—	—	—	—	—	—	—	—	—	—	130	—	—	—	—	—	—	—	3	—	—
—	—	—	—	—	—	—	—	—	—	—	2,686	20	46	169	228	322	682	333	886	364	492
337	1	3	29	42	70	57	42	93	219	218	2,686	20	46	169	228	322	682	333	886	364	492
27,855	456	1,377	8,553	7,884	5,238	2,670	831	846	224,034	9,342	57,864	55,833	44,364	34,626	8,160	8,349	736	71	736	736	736
—	89	62	85	83	116	83	101	81	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	
All Causes—ages 20-65 years.											All Causes—ages 20-65 years.										
Comparative Mortality Figure (Standardized Death-rate)											Comparative Mortality Figure (Standardized Death-rate)										
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males											Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males										

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

[illegible]

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 147.—PROPRIETORS AND MANAGERS OF THEATRES, ENTERTAINMENTS, SPORTS, ETC. (880-884).

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.						
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and up.
8	—	—	—	—	4	—	—	4	—	—	—	—	—	—	—	687
48	—	2	14	18	12	1	—	1	—	96	177	195	22	52	—	172
6	—	1	—	2	2	—	—	1	—	48	—	22	25	29	—	172
18	—	—	1	3	6	5	1	—	—	—	13	33	78	143	123	344
3	—	—	1	—	1	—	—	—	—	—	13	—	13	13	123	—
2	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—
6	—	—	—	2	4	—	—	—	—	—	—	—	—	57	—	—
7	—	—	—	1	1	3	—	—	—	—	—	11	13	86	—	—
47	—	—	—	2	11	14	11	2	—	—	—	22	143	402	1546	—
—	—	—	—	—	—	—	—	9	—	—	—	22	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	123	—
13	—	—	—	—	—	5	—	2	—	—	—	—	13	—	123	—
29	—	—	—	1	3	9	7	7	—	—	—	11	39	143	246	344
—	—	—	—	—	7	—	—	—	—	—	—	11	91	238	861	859
2	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—
11	—	—	2	1	—	2	—	2	—	—	25	11	13	57	246	172
16	—	—	—	2	4	4	3	3	—	—	—	22	52	115	123	859
8	—	—	—	—	3	3	—	—	—	—	—	11	39	86	—	172
23	—	—	2	2	7	3	3	6	—	—	25	22	91	86	369	1031
35	—	—	2	2	12	7	6	6	—	—	25	22	136	201	738	1031
11	—	—	—	—	1	3	1	—	—	—	13	—	13	86	123	1031
2	—	—	1	—	1	—	—	—	—	—	13	—	—	—	—	—
23	—	—	—	1	2	3	5	12	—	—	—	11	26	86	615	2062
39	—	—	4	6	11	9	4	5	—	—	51	65	143	258	492	859
—	—	—	—	—	—	2	—	1	—	—	—	11	—	57	—	172
4	—	—	—	1	—	—	—	—	—	—	13	11	26	—	—	—
4	—	—	1	1	2	1	—	—	—	—	—	13	—	29	—	—
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5	—	—	1	3	—	1	—	—	—	—	13	33	—	29	—	—
1	—	—	—	—	—	1	—	—	—	—	—	—	—	29	—	—
3	—	—	—	—	—	4	—	2	—	—	—	—	—	26	115	—
1	—	—	—	1	1	2	2	1	—	—	—	11	13	57	246	172
6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	2	1	—	—	6	—	—	—	22	13	—	—	—
21	—	1	—	2	7	—	—	—	—	106	—	22	91	86	246	1031
1	—	—	—	—	—	—	—	2	—	—	—	22	—	—	—	172
7	—	—	—	—	—	—	—	1	—	—	—	—	26	57	123	344
11	—	—	—	—	—	1	—	2	—	—	—	—	—	29	246	1375
17	—	—	—	—	—	—	—	8	—	—	—	—	—	—	—	—
21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11	—	—	—	4	3	4	4	—	—	—	—	43	39	115	—	—
17	—	—	—	7	7	3	4	—	—	—	—	76	39	115	—	—
21	—	—	—	6	7	1	—	2	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
421	1	5	32	67	105	81	44	86	106	241	405	726	1363	2324	5412	14777

OCCUPATIONAL GROUP 146.—ARTISTS (875).

[illegible]

Comparative Mortality Figure (Standardized Death-rate)	..	..	1,020
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males	..	..	104

OCCUPATIONAL GROUP 148.—ACTORS (885).

OCCUPATIONAL GROUP 149.—MUSICIANS (886).

Mean Annual Death-rate per 100,000.										Mean Annual Death-rate per 100,000.									
Numbers of Deaths at Ages—										Numbers of Deaths at Ages—									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.																			
Influenza ..	14	—	10	1	28	2	2	5	..	Influenza ..	14	—	10	1	28	2	2	5	..
Respiratory tuberculosis ..	98	—	—	—	2	5	9	3	..	Respiratory tuberculosis ..	98	—	—	—	2	5	9	3	..
Other tuberculosis ..	24	—	—	—	11	7	5	1	..	Other tuberculosis ..	24	—	—	—	11	7	5	1	..
Syphilis, etc. ..	6	—	—	—	4	—	1	—	..	Syphilis, etc. ..	6	—	—	—	4	—	1	—	..
Syphilis ..	2	—	—	—	—	—	—	—	..	Syphilis ..	2	—	—	—	—	—	—	—	..
Tabes dorsalis ..	11	—	—	—	6	1	3	—	..	Tabes dorsalis ..	11	—	—	—	6	1	3	—	..
General paralysis of insane ..	5	—	—	—	1	—	2	—	..	General paralysis of insane ..	5	—	—	—	1	—	2	—	..
Aneurysm ..	109	—	—	—	3	6	23	16	..	Aneurysm ..	109	—	—	—	3	6	23	16	..
Cancer, all sites ..	4	—	—	—	—	—	—	—	..	Cancer, all sites ..	4	—	—	—	—	—	—	—	..
Skin ..	1	—	—	—	—	—	—	—	..	Skin ..	1	—	—	—	—	—	—	—	..
Lip ..	9	—	—	—	—	—	—	—	..	Lip ..	9	—	—	—	—	—	—	—	..
Tongue ..	9	—	—	—	1	—	3	—	..	Tongue ..	9	—	—	—	1	—	3	—	..
Esophagus ..	16	—	—	—	2	—	4	—	..	Esophagus ..	16	—	—	—	2	—	4	—	..
Stomach ..	70	—	—	—	3	—	9	12	..	Stomach ..	70	—	—	—	3	—	9	12	..
Other sites ..	3	—	—	—	—	—	—	—	..	Other sites ..	3	—	—	—	—	—	—	—	..
Chronic rheumatism, etc., Gout ..	9	—	—	—	2	—	3	—	..	Chronic rheumatism, etc., Gout ..	9	—	—	—	2	—	3	—	..
Diabetes ..	—	—	—	—	—	—	—	—	..	Diabetes ..	—	—	—	—	—	—	—	—	..
Alcoholism ..	35	—	—	—	4	—	5	4	..	Alcoholism ..	35	—	—	—	4	—	5	4	..
Cerebral hemorrhage, etc. ..	20	—	1	—	—	—	6	2	..	Cerebral hemorrhage, etc. ..	20	—	1	—	—	6	2	..	
Other dis. of the nervous system ..	49	—	—	—	3	8	10	7	..	Other dis. of the nervous system ..	49	—	—	—	3	8	10	7	..
Valvular disease of heart ..	61	—	1	—	2	5	8	6	..	Valvular disease of heart ..	61	—	1	—	2	5	8	6	..
Other heart disease ..	38	—	—	—	1	1	7	20	..	Other heart disease ..	38	—	—	—	1	1	7	20	..
Arterio-sclerosis ..	1	—	—	—	—	—	—	—	..	Arterio-sclerosis ..	1	—	—	—	—	—	—	—	..
Other dis. of circulatory system ..	48	—	—	—	1	4	7	19	..	Other dis. of circulatory system ..	48	—	—	—	1	4	7	19	..
Bronchitis ..	54	—	2	—	12	11	11	5	..	Bronchitis ..	54	—	2	—	12	11	11	5	..
Pneumonia ..	14	—	—	—	—	—	3	4	..	Pneumonia ..	14	—	—	—	—	—	3	4	..
Chronic interstitial pneumonia ..	6	—	—	—	1	—	—	—	..	Chronic interstitial pneumonia ..	6	—	—	—	1	—	—	—	..
Other dis. of respiratory system ..	2	—	—	—	—	—	—	—	..	Other dis. of respiratory system ..	2	—	—	—	—	—	—	—	..
Ulcer of stomach ..	8	—	—	—	—	—	—	—	..	Ulcer of stomach ..	8	—	—	—	—	—	—	—	..
Ulcer of duodenum ..	14	—	—	—	—	—	—	—	..	Ulcer of duodenum ..	14	—	—	—	—	—	—	—	..
Appendicitis ..	21	—	—	—	—	—	—	—	..	Appendicitis ..	21	—	—	—	—	—	—	—	..
Hernia ..	2	—	—	—	—	—	—	—	..	Hernia ..	2	—	—	—	—	—	—	—	..
Intestinal obstruction ..	7	—	—	—	—	—	—	—	..	Intestinal obstruction ..	7	—	—	—	—	—	—	—	..
Cirrhosis of liver ..	236	—	—	—	—	—	—	—	..	Cirrhosis of liver ..	236	—	—	—	—	—	—	—	..
Other dis. of digestive system ..	236	—	—	—	—	—	—	—	..	Other dis. of digestive system ..	236	—	—	—	—	—	—	—	..
Acute nephritis ..	709	—	—	—	—	—	—	—	..	Acute nephritis ..	709	—	—	—	—	—	—	—	..
Chronic nephritis ..	21	—	—	—	—	—	—	—	..	Chronic nephritis ..	21	—	—	—	—	—	—	—	..
Diseases of the prostate ..	9	—	—	—	—	—	—	—	..	Diseases of the prostate ..	9	—	—	—	—	—	—	—	..
Other genito-urinary diseases ..	8	—	—	—	—	—	—	—	..	Other genito-urinary diseases ..	8	—	—	—	—	—	—	—	..
Old age ..	27	—	—	—	—	—	—	—	..	Old age ..	27	—	—	—	—	—	—	—	..
Suicide ..	8	—	—	—	—	—	—	—	..	Suicide ..	8	—	—	—	—	—	—	—	..
Accident ..	21	—	—	—	—	—	—	—	..	Accident ..	21	—	—	—	—	—	—	—	..
Other causes ..	16	—	—	—	—	—	—	—	..	Other causes ..	16	—	—	—	—	—	—	—	..
All causes ..	735	2	20	56	107	137	157	84	172	All causes ..	735	2	20	56	107	137	157	84	172

Years of life (Census population $\times 3$)

. . . Retired Civilian Males

Comparative Mortality Figure (Standardized Death-rate)	1,386
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired-Civilian Males	134

All Causes—ages 20-65 years.
Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred
rates for all Occupied and Retired Civilian Males . . .

..	1,220
urred at the ..	122

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

[illegible]

OCCUPATIONAL GROUP 153.—BARMEN (915).									
CAUSE OF DEATH.									
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.									
Mean Annual Death-rate per 100,000.									
Numbers of Deaths at Ages—									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	70 and up.
181	—	—	—	—	—	—	—	—	—
463	—	—	—	—	—	—	—	—	—
29	—	—	—	—	—	—	—	—	—
97	—	—	—	—	—	—	—	—	—
11	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	—
28	—	—	—	—	—	—	—	—	—
33	—	—	—	—	—	—	—	—	—
889	—	—	—	—	—	—	—	—	—
22	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—
52	—	—	—	—	—	—	—	—	—
83	—	—	—	—	—	—	—	—	—
163	—	—	—	—	—	—	—	—	—
535	—	—	—	—	—	—	—	—	—
40	—	—	—	—	—	—	—	—	—
165	—	—	—	—	—	—	—	—	—
46	—	—	—	—	—	—	—	—	—
581	—	—	—	—	—	—	—	—	—
159	—	—	—	—	—	—	—	—	—
426	—	—	—	—	—	—	—	—	—
622	—	—	—	—	—	—	—	—	—
280	—	—	—	—	—	—	—	—	—
18	—	—	—	—	—	—	—	—	—
379	—	—	—	—	—	—	—	—	—
427	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—
93	—	—	—	—	—	—	—	—	—
55	—	—	—	—	—	—	—	—	—
29	—	—	—	—	—	—	—	—	—
32	—	—	—	—	—	—	—	—	—
28	—	—	—	—	—	—	—	—	—
27	—	—	—	—	—	—	—	—	—
378	—	—	—	—	—	—	—	—	—
145	—	—	—	—	—	—	—	—	—
37	—	—	—	—	—	—	—	—	—
355	—	—	—	—	—	—	—	—	—
70	—	—	—	—	—	—	—	—	—
71	—	—	—	—	—	—	—	—	—
305	—	—	—	—	—	—	—	—	—
187	—	—	—	—	—	—	—	—	—
151	—	—	—	—	—	—	—	—	—
214	—	—	—	—	—	—	—	—	—
6,931	1	8	126	682	1,510	1,733	879	1,992	1,992
227,217	2,103	3,423	21,813	54,291	72,234	47,325	13,317	12,711	12,711
—	19	66	145	197	181	142	132	115	115

OCCUPATIONAL GROUP 155.—LAUNDRY WORKERS (918).

Mean Annual Death-rate per 100,000.												Mean Annual Death-rate per 100,000.											
Numbers of Deaths at Ages—												Numbers of Deaths at Ages—											
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.						
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.																							
Influenza ..	10	—	—	—	—	—	—	4	Respiratory tuberculosis ..	—	—	—	—	—	—	—	—						
Respiratory tuberculosis ..	36	—	—	—	—	—	—	—	Other tuberculosis ..	—	—	—	—	—	—	—	—						
Other tuberculosis ..	1	—	—	—	—	—	—	—	Syphilis, etc. ..	7	—	—	—	—	—	—	—						
Syphilis, etc. ..	2	—	—	—	—	—	—	—	Syphilis ..	2	—	—	—	—	—	—	—						
Syphilis ..	—	—	—	—	—	—	—	—	Tabes dorsalis ..	—	—	—	—	—	—	—	—						
Tabes dorsalis ..	2	—	—	—	—	—	—	—	General paralysis of insane ..	3	—	—	—	—	—	—	—						
General paralysis of insane ..	—	—	—	—	—	—	—	—	Aneurysm ..	—	—	—	—	—	—	—	—						
Aneurysm ..	47	—	—	—	—	—	—	—	Cancer, all sites ..	—	—	—	—	—	—	—	—						
Cancer, all sites ..	1	—	—	—	—	—	—	—	Skin ..	—	—	—	—	—	—	—	—						
Skin ..	—	—	—	—	—	—	—	—	Lip ..	—	—	—	—	—	—	—	—						
Lip ..	—	—	—	—	—	—	—	—	Tongue ..	—	—	—	—	—	—	—	—						
Tongue ..	5	—	—	—	—	—	—	—	Esophagus ..	—	—	—	—	—	—	—	—						
Esophagus ..	9	—	—	—	—	—	—	—	Stomach ..	—	—	—	—	—	—	—	—						
Stomach ..	32	—	—	—	—	—	—	—	Other sites ..	—	—	—	—	—	—	—	—						
Other sites ..	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..	—	—	—	—	—	—	—	—						
Chronic rheumatism, etc., Gout ..	2	—	—	—	—	—	—	—	Diabetes ..	3	—	—	—	—	—	—	—						
Diabetes ..	3	—	—	—	—	—	—	—	Alcoholism ..	—	—	—	—	—	—	—	—						
Alcoholism ..	30	—	—	—	—	—	—	—	Cerebral hemorrhage, etc. ..	—	—	—	—	—	—	—	—						
Cerebral hemorrhage, etc. ..	11	—	—	—	—	—	—	—	Other dis. of the nervous system ..	—	—	—	—	—	—	—	—						
Other dis. of the nervous system ..	—	—	—	—	—	—	—	—	Valvular disease of heart ..	—	—	—	—	—	—	—	—						
Valvular disease of heart ..	22	—	—	—	—	—	—	—	Other heart disease ..	—	—	—	—	—	—	—	—						
Other heart disease ..	31	—	—	—	—	—	—	—	Arterio-sclerosis ..	—	—	—	—	—	—	—	—						
Arterio-sclerosis ..	8	—	—	—	—	—	—	—	Other dis. of circulatory system ..	—	—	—	—	—	—	—	—						
Other dis. of circulatory system ..	—	—	—	—	—	—	—	—	Bronchitis ..	—	—	—	—	—	—	—	—						
Bronchitis ..	30	—	—	—	—	—	—	—	Pneumonia ..	—	—	—	—	—	—	—	—						
Pneumonia ..	6	—	—	—	—	—	—	—	Chronic interstitial pneumonia ..	—	—	—	—	—	—	—	—						
Chronic interstitial pneumonia ..	4	—	—	—	—	—	—	—	Other dis. of respiratory system ..	—	—	—	—	—	—	—	—						
Other dis. of respiratory system ..	2	—	—	—	—	—	—	—	Ulcer of stomach ..	—	—	—	—	—	—	—	—						
Ulcer of stomach ..	—	—	—	—	—	—	—	—	Ulcer of duodenum ..	—	—	—	—	—	—	—	—						
Ulcer of duodenum ..	2	—	—	—	—	—	—	—	Appendicitis ..	—	—	—	—	—	—	—	—						
Appendicitis ..	—	—	—	—	—	—	—	—	Hernia ..	—	—	—	—	—	—	—	—						
Hernia ..	2	—	—	—	—	—	—	—	Intestinal obstruction ..	—	—	—	—	—	—	—	—						
Intestinal obstruction ..	4	—	—	—	—	—	—	—	Cirrhosis of liver ..	—	—	—	—	—	—	—	—						
Cirrhosis of liver ..	5	—	—	—	—	—	—	—	Other dis. of digestive system ..	—	—	—	—	—	—	—	—						
Other dis. of digestive system ..	19	—	—	—	—	—	—	—	Acute nephritis ..	—	—	—	—	—	—	—	—						
Acute nephritis ..	4	—	—	—	—	—	—	—	Chronic nephritis ..	—	—	—	—	—	—	—	—						
Chronic nephritis ..	4	—	—	—	—	—	—	—	Diseases of the prostate ..	—	—	—	—	—	—	—	—						
Diseases of the prostate ..	18	—	—	—	—	—	—	—	Other genito-urinary diseases ..	—	—	—	—	—	—	—	—						
Other genito-urinary diseases ..	10	—	—	—	—	—	—	—	Old age ..	—	—	—	—	—	—	—	—						
Old age ..	8	—	—	—	—	—	—	—	Suicide ..	—	—	—	—	—	—	—	—						
Suicide ..	10	—	—	—	—	—	—	—	Accident ..	—	—	—	—	—	—	—	—						
Accident ..	10	—	—	—	—	—	—	—	Other causes ..	—	—	—	—	—	—	—	—						
Other causes ..	357	4	6	26	30	60	81	45	All causes ..	—	—	—	—	—	—	—	—						
All causes ..	157	302	502	500	1014	2193	3836	10511															

OCCUPATIONAL GROUP 154.—WAITERS (916).

Mean Annual Death-rate per 100,000.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Numbers of Deaths at Ages—																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
									Influenza ..	Respiratory tuberculosis ..	Other tuberculosis ..	Syphilis, etc. ..	Syphilis ..	Tabs dorsalis ..	General paralysis of insane ..	Aneurysm ..	Cancer, all sites ..	Skin ..	Lip ..	Tongue ..	Esophagus ..	Stomach ..	Other sites ..	Chronic rheumatism, etc., Gout ..	Diabetes ..	Alcoholism ..	Cerebral hemorrhage, etc. ..	Other dis. of the nervous system ..	Valvular disease of heart ..	Other heart disease ..	Arterio-sclerosis ..	Other dis. of circulatory system ..	Bronchitis ..	Pneumonia ..	Chronic interstitial pneumonia ..	Other dis. of respiratory system ..	Ulcer of stomach ..	Ulcer of duodenum ..	Appendicitis ..	Hernia ..	Intestinal obstruction ..	Cirrhosis of liver ..	Other dis. of digestive system ..	Acute nephritis ..	Chronic nephritis ..	Diseases of the prostate ..	Other genito-urinary diseases ..	Old age ..	Suicide ..	Accident ..	Other causes ..	All causes ..																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
12	4	15	2	2	2	3	3	3	68	217	194	230	234	31	84	—	424	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

All Causes—ages 20-65 years.
Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the
rates for all Occupied and Retired Civilian Males

All Causes—ages 20-65 years.
Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred at the
rates for all Occupied and Retired Civilian Males

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 157.—CHIMNEY SWEEPS (924).

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.							
All Ages 16 and upwards.		16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and up.
8	—	—	—	—	—	1	3	—	4	—	—	—	—	—	—	—	326
32	—	—	—	—	—	8	10	—	—	—	544	112	228	181	292	148	—
2	—	—	—	—	—	1	2	—	—	—	—	—	—	23	29	—	—
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	58	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	2	—	—	—	—	—	—	—	58	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
79	—	—	—	—	4	14	20	15	26	—	—	—	130	318	584	1109	2119
21	—	—	—	—	2	2	4	3	10	—	—	—	65	45	117	222	815
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	1	—	—	3	—	—	—	—	23	—	—	244
3	—	—	—	—	—	—	1	1	1	—	—	—	—	—	29	74	81
11	—	—	—	—	—	6	2	2	2	—	—	—	—	136	58	148	81
40	—	—	—	—	2	5	13	9	11	—	—	—	65	113	380	665	886
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	1	2	—	—	—	—	—	—	—	163
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
27	—	—	—	—	—	1	5	11	10	—	—	—	33	45	29	222	815
7	—	—	—	—	—	2	1	3	—	—	—	—	—	—	—	—	—
19	—	—	1	1	—	3	8	3	3	—	181	56	—	68	234	222	244
36	—	—	2	—	—	5	8	8	13	—	—	112	—	113	234	591	1059
19	—	—	—	—	—	—	5	5	14	—	—	—	—	—	146	—	1141
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
54	—	—	—	—	1	2	11	13	27	—	—	—	33	45	321	961	2200
—	—	—	—	1	3	5	5	2	6	—	—	56	98	113	146	148	489
22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	2	—	1	—	—	—	—	—	58	—	81
3	—	—	—	—	—	1	1	1	—	—	—	—	—	23	29	74	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	1	—	—	—	—	—	—	—	23	—	—	—
3	—	—	—	—	—	—	—	—	1	—	—	—	—	—	58	—	81
1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	29	—	—
3	—	—	—	—	1	1	—	—	1	—	—	—	33	23	—	—	81
9	—	—	—	—	—	—	2	3	4	—	—	—	—	—	58	222	326
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	2	6	1	5	—	—	—	—	45	175	74	407
2	—	—	—	—	—	1	—	—	—	—	—	—	—	23	—	—	81
3	—	—	—	—	—	—	—	—	2	—	—	—	—	—	29	—	—
32	—	—	—	—	—	—	2	1	29	—	—	—	—	—	58	74	2363
3	—	—	—	—	3	—	—	—	—	—	—	—	98	—	—	—	81
10	—	—	—	—	1	3	4	1	1	—	—	—	33	68	117	74	—
11	—	—	—	—	—	2	2	4	3	—	—	—	—	—	—	—	—
408	—	—	4	6	21	53	102	69	153	—	725	336	684	1203	2980	5100	12469

OCCUPATIONAL GROUP 156.—HAIR DRESSERS, ETC. (920).

Numbers of Deaths at Ages--										Mean Annual Death-rate per 100,000.					For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.	
All Ages 16 and upwards.	16--	20--	25--	35--	45--	55--	65--	70 and upwards.	16--	20--	25--	35--	45--	55--		65-- and up.
22	14	21	4	1	8	—	2	7	127	199	16	4	41	—	92	384
214	2	2	62	53	50	—	3	—	18	19	—	240	216	259	128	138
28	—	—	5	5	9	—	1	—	—	—	—	20	47	47	46	—
35	—	—	2	4	13	—	4	—	—	—	—	8	16	67	140	184
3	—	—	—	—	2	—	1	—	—	—	—	—	—	10	—	46
10	—	—	—	—	3	—	2	—	—	—	—	—	16	58	92	—
16	—	—	2	3	7	—	3	—	—	—	8	12	36	35	46	—
6	—	—	—	1	1	—	—	—	—	—	—	4	5	47	—	—
134	—	2	2	8	38	—	16	25	—	19	8	33	197	500	737	1371
2	—	—	—	—	1	—	—	1	—	—	—	—	5	5	—	55
1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	46	—
10	—	—	—	—	6	—	1	—	—	—	—	—	31	12	46	110
10	—	—	—	—	7	—	1	—	—	—	—	—	36	23	—	—
23	—	—	1	3	5	—	2	—	—	—	4	12	28	105	—	274
88	—	2	1	4	19	—	14	17	—	19	4	16	98	361	645	932
4	—	—	—	—	2	—	1	1	—	—	—	—	10	—	46	55
20	—	—	3	—	4	—	4	—	—	—	12	—	21	58	184	219
—	—	1	2	—	—	—	—	—	—	—	—	—	—	—	—	—
88	2	—	3	3	11	—	16	24	9	8	12	57	361	737	1316	—
36	—	—	3	6	5	—	4	5	18	12	24	26	128	184	274	—
80	9	5	9	15	12	—	10	11	81	47	35	61	62	105	480	603
104	1	1	6	8	18	—	12	30	9	23	33	328	552	332	552	1645
39	—	—	—	4	7	—	4	12	—	16	36	140	184	—	—	—
5	—	—	—	—	3	—	—	—	—	4	—	16	—	—	55	—
75	—	2	1	5	11	—	11	29	19	4	20	57	186	506	1590	—
94	—	3	11	21	20	—	10	12	28	43	86	104	198	460	658	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
23	1	—	4	3	5	—	—	3	9	15	12	26	81	—	164	—
12	—	—	2	3	3	—	1	—	—	8	12	16	35	46	—	—
1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
9	2	2	—	1	1	—	—	—	18	19	—	4	5	35	—	—
4	—	—	—	—	1	—	1	—	—	—	—	—	5	23	46	—
7	—	—	1	—	1	—	1	2	—	—	4	—	5	23	46	110
14	—	—	—	—	6	—	1	1	—	—	—	31	70	46	55	—
24	1	1	1	3	6	—	2	4	9	9	4	12	31	70	92	219
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
60	—	2	2	1	22	—	4	—	—	—	4	—	114	163	184	—
13	—	—	—	—	3	—	2	7	19	8	37	5	35	92	384	384
13	—	—	—	—	1	—	4	—	—	—	—	8	10	47	110	—
12	—	—	—	2	2	—	2	41	—	—	—	—	10	12	92	2248
44	—	—	—	—	—	—	2	2	—	—	—	—	—	—	—	—
30	—	—	2	7	15	—	3	1	—	8	29	78	23	138	55	—
22	1	—	5	1	5	—	2	6	9	19	4	26	23	92	329	—
55	—	2	10	9	10	13	3	2	—	—	—	—	—	—	—	—
1,310	35	48	137	173	290	268	122	237	316	456	530	705	1501	3119	5617	12993

	All Causes—ages 20-65 years.	
	Comparative Mortality Figure (Standardized Death-rate)	
1,234	Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males	1,234
..		..
124		124

All Causes—ages 20-65 years.
Comparative Mortality Figure (Standardized Death-rate)
Deaths actually recorded per 100 which would have occurred for all Occupied and Retired Civilian Males . .

OCCUPATIONAL GROUP 158b.—RAILWAY CLERKS (Occ. 931, 933, 939. Ind. 530).

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.						
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and up.
58	3	7	8	13	4	13	6	4	12	21	16	30	15	92	311	189
292	12	42	86	88	32	26	4	4	49	127	172	204	124	185	207	95
31	5	6	7	7	3	1	2	1	21	18	14	7	23	7	104	47
28	—	—	—	8	12	6	2	—	—	—	—	19	46	43	104	—
2	—	—	—	2	—	—	—	—	—	—	—	5	—	—	—	—
9	—	—	—	—	4	3	2	—	—	—	—	—	15	21	104	—
14	—	—	—	5	8	—	—	—	—	—	—	12	31	7	—	—
3	—	—	—	1	—	2	—	—	—	—	—	2	14	—	—	—
185	2	—	8	8	40	49	32	44	8	6	16	19	155	348	1656	2080
2	—	—	1	—	—	1	—	—	—	—	2	—	—	7	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	2	2	—	1	—	—	—	—	8	14	104	47
10	—	—	—	—	2	2	1	5	—	—	—	—	—	14	52	236
22	—	—	—	—	5	3	8	6	—	—	—	—	19	21	414	284
143	2	2	7	8	31	41	21	31	6	14	19	120	291	1087	1466	—
5	—	—	—	—	—	2	1	2	8	12	8	12	—	14	52	95
30	2	4	4	5	2	4	3	6	—	—	—	—	8	28	155	284
—	—	—	—	4	15	36	31	—	—	—	—	9	58	256	1605	2450
138	—	—	—	4	11	12	5	11	4	9	10	9	43	85	289	520
52	1	3	5	4	—	—	—	—	—	—	—	—	—	—	—	—
106	1	4	8	13	9	27	15	29	4	12	16	30	35	192	776	1371
116	—	1	8	9	17	17	17	38	—	3	16	21	69	185	880	1797
64	—	—	1	—	5	23	11	24	—	—	—	2	18	164	569	1135
—	—	—	—	—	—	3	—	—	—	—	—	—	21	52	—	—
4	—	—	—	—	8	16	6	40	—	—	3	2	12	31	114	311
77	—	1	—	5	—	—	—	—	—	—	—	—	—	—	—	1891
125	7	9	12	25	28	23	7	14	29	27	24	58	108	164	362	662
—	—	—	—	2	8	7	1	—	—	—	—	8	5	31	50	52
25	—	—	4	2	5	2	—	3	—	—	—	3	4	5	19	14
12	—	1	2	7	2	1	1	—	—	—	4	—	16	8	7	52
22	1	—	—	—	4	3	—	—	—	4	15	14	5	15	21	—
6	—	5	7	2	4	3	—	—	—	4	—	—	2	8	—	—
12	—	—	1	1	1	3	1	—	—	—	2	2	2	8	28	52
10	—	—	—	—	2	4	2	2	—	—	—	4	4	43	104	47
34	—	3	6	4	7	6	3	5	—	—	9	12	9	27	43	155
5	—	—	—	—	2	1	—	—	4	—	—	2	8	7	—	—
48	1	—	4	7	9	13	5	9	—	3	8	16	35	92	259	426
19	—	1	—	—	—	6	3	10	—	—	—	—	43	155	473	—
25	—	—	—	2	5	7	3	8	—	—	—	5	19	50	155	378
60	—	—	—	—	—	3	6	51	—	—	—	—	—	21	311	2411
23	—	2	4	6	5	5	—	—	—	—	6	8	14	19	36	—
28	—	3	3	2	15	6	3	4	8	9	6	5	19	43	155	—
79	6	8	5	15	15	16	7	7	—	—	—	—	—	—	—	189
1,731	45	102	184	237	260	356	179	368	186	309	369	550	1007	2531	9255	17400

94,241	24,252	33,057	49,881	43,125	25,812	14,067	1,932	2,115
—	75	88	92	86	87	98	186	128

OCCUPATIONAL GROUP 159.—DRAUGHTSMEN (932).

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.							
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		16—	20—	25—	35—	45—	55—	65—	70 and up.
26	1	4	11	2	2	3	—	3	3	6	20	44	17	34	106	—	442
100	13	16	33	23	12	1	—	1	1	77	79	131	198	203	35	146	147
16	2	6	5	2	—	—	—	—	—	12	30	20	17	—	—	148	147
7	—	—	1	1	—	—	—	1	—	—	—	4	9	34	71	—	147
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	1	—	—	—	—	—	—	—	—	17	—	—	—
3	—	—	—	—	—	1	—	—	—	—	—	4	9	—	—	—	—
3	—	—	—	—	—	1	—	—	—	—	—	—	—	17	35	—	—
42	1	2	3	5	7	1	10	1	5	6	10	12	43	119	319	1462	737
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	35	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
28	1	2	2	3	6	6	5	3	2	6	10	8	26	102	213	731	442
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	—	3	2	—	—	—	—	—	—	—	15	8	17	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
22	—	1	—	—	—	—	—	—	—	—	5	—	—	—	—	—	—
21	1	2	4	3	4	3	1	6	3	6	10	16	26	68	106	146	442
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
26	—	3	4	5	3	7	—	4	4	—	15	16	43	51	248	—	590
31	1	2	5	4	7	2	2	8	4	6	10	20	34	119	71	292	1180
12	—	—	—	—	1	4	2	—	5	—	—	—	—	17	142	292	737
2	—	—	—	—	1	—	—	—	—	—	—	—	—	4	17	—	—
16	—	—	—	—	2	3	—	7	—	—	—	—	—	34	106	439	1032
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
32	—	3	6	7	7	4	4	1	1	15	24	60	119	142	585	147	147
1	—	—	—	—	1	—	—	—	—	—	—	—	—	17	—	—	—
5	—	—	—	—	—	—	—	—	—	—	5	8	—	17	35	—	442
6	—	1	2	1	—	1	—	1	—	—	5	4	—	—	—	—	147
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4	—	3	1	—	1	—	—	—	—	—	15	4	17	—	—	—	147
4	—	—	—	—	—	—	—	—	—	—	—	4	—	—	35	146	146
3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	71	146	147
9	—	1	—	3	2	—	1	1	1	—	5	4	26	34	146	146	147
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4	—	2	—	1	1	—	—	—	—	—	10	—	9	17	—	—	—
9	—	1	—	—	2	—	—	—	—	—	5	—	—	34	106	146	295
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	146	146	147
4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	71	146	147
8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1180
12	1	—	2	6	2	—	—	—	—	—	—	—	—	—	—	—	—
10	1	1	3	2	1	1	1	—	—	—	6	8	51	34	—	146	147
32	3	1	5	4	3	8	6	2	—	—	6	5	12	17	35	—	—
477	24	53	94	70	64	62	46	64	64	142	263	373	597	1085	2196	6725	9440

84,105	16,956	20,178	25,170	11,718	5,898	2,823	684
—	57	75	93	93	94	85	135

OCCUPATIONAL GROUP 160.—WAREHOUSEMEN—TEXTILES AND CLOTHING (940, part).*																
CAUSE OF DEATH.																
For the precise significance of each title and its relation to the International List of Causes of Death, see page I.																
Mean Annual Death-rate per 100,000.																
Numbers of Deaths at Ages—																
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.							
									16—	20—	25—	35—	45—	55—	65—	70 and upwards.
Influenza ..	25	2	—	4	3	4	5	3	4	4	4	4	4	4	4	4
Respiratory tuberculosis ..	112	8	—	23	21	23	19	3	23	23	27	42	293	115	253	412
Other tuberculosis ..	10	—	—	1	—	—	2	—	1	—	18	14	36	46	—	—
Syphilis, etc. ..	—	—	—	—	—	—	—	—	—	—	—	—	84	69	—	103
Syphilis ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tuberculosis ..	1	—	—	—	—	—	—	—	—	—	—	—	14	—	—	—
General paralysis of insane ..	4	—	—	—	—	—	—	—	—	—	—	—	28	69	—	103
Aneurysm ..	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cancer, all sites ..	82	—	—	3	23	30	14	—	1	—	32	14	321	690	1181	1132
Skin ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lip ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tongue ..	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Esophagus ..	18	—	—	—	5	3	3	—	5	—	11	14	84	115	253	206
Stomach ..	52	—	—	1	12	21	—	—	12	—	22	—	168	483	675	926
Other sites ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chronic rheumatism, etc., Gout ..	13	2	3	—	—	—	—	—	2	—	41	55	—	28	69	—
Diabetes ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcoholism ..	47	—	—	—	7	8	—	—	7	—	11	28	98	184	675	2160
Cerebral hemorrhage, etc. ..	30	1	3	3	4	6	5	—	4	—	55	32	56	42	138	422
Other dis. of the nervous system ..	40	1	2	1	3	8	8	—	2	—	37	11	42	112	184	591
Valvular disease of heart ..	1572	49	1	4	2	12	12	—	2	—	21	43	28	276	506	1029
Other heart disease ..	39	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arteriosclerosis ..	15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of circulatory system ..	56	—	—	—	7	10	14	—	7	—	—	—	—	—	—	—
Bronchitis ..	47	2	3	7	9	6	5	—	9	—	55	76	127	126	138	422
Pneumonia ..	9	1	—	—	—	—	—	—	1	—	21	—	14	42	23	169
Chronic interstitial pneumonia ..	9	1	—	—	—	—	—	—	1	—	21	—	14	42	23	169
Other dis. of respiratory system ..	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ulcer of stomach ..	11	1	2	1	3	2	1	—	3	—	37	11	—	42	23	84
Ulcer of duodenum ..	6	—	—	—	—	—	—	—	—	—	18	—	—	46	309	206
Appendicitis ..	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hernia ..	13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Intestinal obstruction ..	28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cirrhosis of liver ..	9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of digestive system ..	37	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acute nephritis ..	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chronic nephritis ..	28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diseases of the prostate ..	9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other genito-urinary diseases ..	415	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Old age ..	2092	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Suicide ..	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Accident ..	223	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other causes ..	25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
All causes ..	745	22	39	56	60	119	150	98	22	39	717	605	846	1662	3448	8270
Comparative Mortality Figure (Standardized Death-rate) ..	40,278	4,890	5,439	9,249	7,092	7,161	4,350	1,185	972	—	—	—	—	—	—	—
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..	—	184	204	152	132	144	134	166	152	—	—	—	—	—	—	—

* This group comprises the Warehousemen in the Wholesale and Retail Textile and Clothing Distributive Industries (Ind. Code Nos. 635, 636).

OCCUPATIONAL GROUP 161.—STOREKEEPERS (941).

OCCUPATIONAL GROUP 160b.—WAREHOUSEMEN—CEREALS, PROVISIONS AND DRY GOODS (940, part)*

CAUSE OF DEATH.

For the precise significance of each title and its relation to the International List of Causes of Death, see page I.

Mean Annual Death-rate per 100,000.										Numbers of Deaths at Ages—										For the precise significance of each title and its relation to the International List of Causes of Death, see page I.										Mean Annual Death-rate per 100,000.									
All Ages 16 and upwards.					16—20—25—35—45—55—65—70 and upwards.					16—20—25—35—45—55—65—70 and upwards.					16—20—25—35—45—55—65—70 and upwards.					16—20—25—35—45—55—65—70 and upwards.					16—20—25—35—45—55—65—70 and upwards.														
Influenza ..	50	2	3	2	6	14	8	9	37	32	8	22	57	56	235	200	67	Respiratory tuberculosis ..	161	4	17	30	56	31	16	5	73	184	117	210	126	113	130	67					
Other tuberculosis ..	15	2	4	3	6	3	1	2	37	43	12	12	61	56	52	—	—	Syphilis, etc.	33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—					
Syphilis ..	2	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	Tabes dorsalis ..	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—					
General paralysis of insane ..	9	—	—	1	2	3	10	5	—	—	—	—	—	—	—	—	—	Aneurysm ..	15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—					
Cancer, all sites ..	215	—	—	3	9	51	78	40	—	—	12	34	207	549	1042	1133	—	Skin ..	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—					
Lip ..	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Tongue ..	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—					
Tongue ..	24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Esophagus ..	24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Stomach ..	47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Stomach ..	47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Other sites ..	131	—	—	3	7	33	44	22	—	—	12	26	134	310	573	733	—	Chronic rheumatism, etc., Gout ..	9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Chronic rheumatism, etc., Gout ..	9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Diabetes ..	10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Diabetes ..	10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Alcoholism ..	92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Cerebral hemorrhage, etc.	22	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other dis. of the nervous system ..	22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Valvular disease of heart ..	94	—	2	11	10	18	25	8	—	—	—	—	—	—	—	—	—	Other heart disease ..	110	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Other heart disease ..	110	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Arterio-sclerosis ..	53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Arterio-sclerosis ..	53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other dis. of circulatory system ..	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Other dis. of circulatory system ..	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Bronchitis ..	110	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Bronchitis ..	110	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Pneumonia ..	102	1	1	15	23	23	22	4	13	18	11	58	86	93	155	104	433				
Pneumonia ..	102	1	1	15	23	23	22	4	13	18	11	58	86	93	155	104	433	Chronic interstitial pneumonia ..	26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Chronic interstitial pneumonia ..	26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other dis. of respiratory system ..	16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Other dis. of respiratory system ..	16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Ulcer of stomach ..	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Ulcer of stomach ..	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Ulcer of duodenum ..	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Ulcer of duodenum ..	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Appendicitis ..	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Appendicitis ..	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Hernia ..	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Hernia ..	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Intestinal obstruction ..	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Intestinal obstruction ..	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Cirrhosis of liver ..	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Cirrhosis of liver ..	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other dis. of digestive system ..	23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Other dis. of digestive system ..	23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Acute nephritis ..	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Acute nephritis ..	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Chronic nephritis ..	46	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Chronic nephritis ..	46	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Diseases of the prostate ..	13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Diseases of the prostate ..	13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other genito-urinary diseases ..	12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Other genito-urinary diseases ..	12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Old age ..	52	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Old age ..	52	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Suicide ..	29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Suicide ..	29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Accident ..	38	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Accident ..	38	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other causes ..	58	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Other causes ..	58	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	All causes ..	1,440	14	35	102	179	273	319	177	341	257	379	397	671	1108	2245	4613	11367				

Years of life (Census population × 3) 112,788

Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100. 104

Comparative Mortality Figure (Standardized Death-rate) 952

Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males 95

All Causes—ages 20-65 years.

Comparative Mortality Figure (Standardized Death-rate) 952

Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males 95

* This group comprises the Warehousemen in the following Wholesale or Retail Distributive Industries:—Corn and other Cereals, Tea, Coffee Grocery and Provisions (Ind. Code Nos. 602-3, 609-611).

OCCUPATIONAL GROUP 162.—PACKERS (949).										OCCUPATIONAL GROUP 163.—STATIONARY ENGINE AND CRANE DRIVERS (950).									
Numbers of Deaths at Ages—										Numbers of Deaths at Ages—									
Mean Annual Death-rate per 100,000.										Mean Annual Death-rate per 100,000.									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	
CAUSE OF DEATH.										CAUSE OF DEATH.									
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.										For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.									
44	1	1	1	1	1	1	1	1	Influenza ..	126	—	4	13	18	22	36	14	19	Respiratory tuberculosis ..
250	17	29	43	60	56	40	2	9	Respiratory tuberculosis ..	279	16	40	8	64	66	32	3	2	Respiratory tuberculosis ..
15	2	3	4	2	12	7	—	3	Other tuberculosis ..	38	6	5	—	12	5	15	—	1	Other tuberculosis ..
32	—	—	—	—	6	40	33	—	Syphilis, etc. ..	52	—	—	—	5	17	1	—	4	Syphilis, etc. ..
4	—	—	—	—	3	4	8	—	Syphilis ..	4	—	—	—	—	—	—	—	—	Syphilis ..
8	—	—	—	—	—	—	—	—	Tuberculosis ..	12	—	—	—	—	—	—	—	—	Tuberculosis ..
12	—	—	—	—	—	—	—	—	General paralysis of insane ..	17	—	—	—	—	—	—	—	—	General paralysis of insane ..
18	—	—	—	—	—	—	—	—	General paralysis of insane ..	19	—	—	—	—	—	—	—	—	General paralysis of insane ..
20	—	—	—	—	—	—	—	—	Aneurysm ..	490	—	—	—	—	—	—	—	—	Aneurysm ..
26	—	—	—	—	—	—	—	—	Cancer, all sites ..	27	—	—	—	—	—	—	—	—	Cancer, all sites ..
32	—	—	—	—	—	—	—	—	Cancer, all sites ..	27	—	—	—	—	—	—	—	—	Cancer, all sites ..
38	—	—	—	—	—	—	—	—	Skin ..	4	—	—	—	—	—	—	—	—	Skin ..
44	—	—	—	—	—	—	—	—	Lip ..	25	—	—	—	—	—	—	—	—	Lip ..
50	—	—	—	—	—	—	—	—	Tongue ..	27	—	—	—	—	—	—	—	—	Tongue ..
56	—	—	—	—	—	—	—	—	Esophagus ..	135	—	—	—	—	—	—	—	—	Esophagus ..
62	—	—	—	—	—	—	—	—	Stomach ..	272	—	—	—	—	—	—	—	—	Stomach ..
68	—	—	—	—	—	—	—	—	Other sites ..	13	—	—	—	—	—	—	—	—	Other sites ..
74	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..	310	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..
80	—	—	—	—	—	—	—	—	Diabetes ..	84	—	—	—	—	—	—	—	—	Diabetes ..
86	—	—	—	—	—	—	—	—	Alcoholism ..	266	—	—	—	—	—	—	—	—	Alcoholism ..
92	—	—	—	—	—	—	—	—	Cerebral hemorrhage, etc. ..	267	—	—	—	—	—	—	—	—	Cerebral hemorrhage, etc. ..
98	—	—	—	—	—	—	—	—	Other dis. of the nervous system ..	149	—	—	—	—	—	—	—	—	Other dis. of the nervous system ..
104	—	—	—	—	—	—	—	—	Valvular disease of heart ..	296	—	—	—	—	—	—	—	—	Valvular disease of heart ..
110	—	—	—	—	—	—	—	—	Other heart disease ..	201	—	—	—	—	—	—	—	—	Other heart disease ..
116	—	—	—	—	—	—	—	—	Arterio-sclerosis ..	37	—	—	—	—	—	—	—	—	Arterio-sclerosis ..
122	—	—	—	—	—	—	—	—	Other dis. of circulatory system ..	26	—	—	—	—	—	—	—	—	Other dis. of circulatory system ..
128	—	—	—	—	—	—	—	—	Bronchitis ..	14	—	—	—	—	—	—	—	—	Bronchitis ..
134	—	—	—	—	—	—	—	—	Pneumonia ..	27	—	—	—	—	—	—	—	—	Pneumonia ..
140	—	—	—	—	—	—	—	—	Chronic interstitial pneumonia ..	27	—	—	—	—	—	—	—	—	Chronic interstitial pneumonia ..
146	—	—	—	—	—	—	—	—	Other dis. of respiratory system ..	10	—	—	—	—	—	—	—	—	Other dis. of respiratory system ..
152	—	—	—	—	—	—	—	—	Ulcer of stomach ..	27	—	—	—	—	—	—	—	—	Ulcer of stomach ..
158	—	—	—	—	—	—	—	—	Ulcer of duodenum ..	27	—	—	—	—	—	—	—	—	Ulcer of duodenum ..
164	—	—	—	—	—	—	—	—	Appendicitis ..	27	—	—	—	—	—	—	—	—	Appendicitis ..
170	—	—	—	—	—	—	—	—	Hernia ..	27	—	—	—	—	—	—	—	—	Hernia ..
176	—	—	—	—	—	—	—	—	Intestinal obstruction ..	27	—	—	—	—	—	—	—	—	Intestinal obstruction ..
182	—	—	—	—	—	—	—	—	Other dis. of digestive system ..	27	—	—	—	—	—	—	—	—	Other dis. of digestive system ..
188	—	—	—	—	—	—	—	—	Acute nephritis ..	19	—	—	—	—	—	—	—	—	Acute nephritis ..
194	—	—	—	—	—	—	—	—	Chronic nephritis ..	118	—	—	—	—	—	—	—	—	Chronic nephritis ..
200	—	—	—	—	—	—	—	—	Diseases of the prostate ..	32	—	—	—	—	—	—	—	—	Diseases of the prostate ..
206	—	—	—	—	—	—	—	—	Other genito-urinary diseases ..	36	—	—	—	—	—	—	—	—	Other genito-urinary diseases ..
212	—	—	—	—	—	—	—	—	Old age ..	233	—	—	—	—	—	—	—	—	Old age ..
218	—	—	—	—	—	—	—	—	Suicide ..	44	—	—	—	—	—	—	—	—	Suicide ..
224	—	—	—	—	—	—	—	—	Accident ..	181	—	—	—	—	—	—	—	—	Accident ..
230	—	—	—	—	—	—	—	—	Other causes ..	160	—	—	—	—	—	—	—	—	Other causes ..
236	—	—	—	—	—	—	—	—	All causes ..	3,671	—	—	—	—	—	—	—	—	All causes ..
242	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
248	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
254	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
260	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
266	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
272	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
278	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
284	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
290	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
296	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
302	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
308	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
314	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
320	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
326	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
332	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
338	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
344	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
350	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
356	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
362	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
368	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
374	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
380	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
386	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
392	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
398	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
404	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
410	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
416	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
422	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
428	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
434	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
440	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
446	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
452	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
458	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
464	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
470	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	
476	—	—	—	—	—	—	—	—			—	—	—	—	—	—	—	—	

OCCUPATIONAL GROUP 7a.—COAL MINE—HEWERS AND GETTERS (042).
(Northumberland.)

[illegible]

All Causes—ages 20-65 years,	
Mortality Figure (Standardized Death-rate)	recorded per 100 which would have occurred at the
1,438	Occupied and Retired Civilian Males
82	Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

All Causes—ages 20–65 years.
Comparative Mortality Figure (Standardized Death-rates actually recorded per 100 which would have occurred for all Occupied and Retired Civilian Males).

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 7b.—COAL MINE—HEWERS AND GETTERS (042). (Durham.)																OCCUPATIONAL GROUP 7c.—COAL MINE—HEWERS AND GETTERS (042). (Cheshire and Lancashire.)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Numbers of Deaths at Ages—																Mean Annual Death-rate per 100,000.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
16—	20—	25—	35—	45—	55—	65—	70 and upwards.	CAUSE OF DEATH. For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.								Numbers of Deaths at Ages—								Mean Annual Death-rate per 100,000.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
16—	20—	25—	35—	45—	55—	65—	70 and upwards.									16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
84	1	6	20	12	12	17	10	Influenza	20	29	31	25	35	123	181	174	57	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

OCCUPATIONAL GROUP 7d.—COAL MINE—HEWERS AND GETTERS (042). (Yorkshire, West Riding.)												OCCUPATIONAL GROUP 7e.—COAL MINE—HEWERS AND GETTERS (042). (Nottinghamshire.)												
Mean Annual Death-rate per 100,000.												Mean Annual Death-rate per 100,000.												
Numbers of Deaths at Ages—												Numbers of Deaths at Ages—												
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	CAUSE OF DEATH.			All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	CAUSE OF DEATH.			
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.												For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.												
87	—	2	13	18	19	11	6	18	Influenza ..	..	..	14	—	—	2	2	4	1	4	1	14	Influenza ..	..	..
300	—	31	66	90	98	28	11	4	Respiratory tuberculosis	..	..	67	—	—	15	22	22	7	7	—	67	Respiratory tuberculosis	..	..
26	1	—	4	5	7	3	—	—	Other tuberculosis	..	..	5	—	—	1	6	3	—	—	—	5	Other tuberculosis	..	..
50	—	—	1	17	16	11	5	—	Syphilis, etc.	..	..	20	—	—	2	6	1	—	—	—	20	Syphilis, etc.	..	..
2	—	—	—	1	1	—	—	—	Syphilis, etc.	..	..	1	—	—	—	—	—	—	—	—	1	Syphilis, etc.	..	..
9	—	—	—	1	5	2	2	—	Tuberculosis	..	..	3	—	—	—	—	—	—	—	—	3	Tuberculosis	..	..
28	—	—	1	6	6	5	2	—	General paralysis of insane	..	..	14	—	—	2	6	4	—	—	—	14	General paralysis of insane	..	..
11	—	—	1	1	4	2	2	—	Aneurysm	..	..	2	—	—	1	9	16	22	13	10	2	Aneurysm	..	..
256	—	3	8	19	71	68	37	50	Cancer, all sites ..	..	..	71	—	—	—	—	—	—	—	—	71	Cancer, all sites ..	..	..
10	—	—	—	3	3	3	2	2	Skin ..	..	..	3	—	—	—	—	1	1	—	1	3	Skin ..	..	..
3	—	—	—	—	—	—	—	—	Lip ..	..	..	—	—	—	—	—	—	—	—	—	—	Lip ..	..	..
14	—	—	—	—	—	—	—	—	Tongue ..	..	..	—	—	—	—	—	—	—	—	—	—	Tongue ..	..	..
11	—	—	—	1	3	4	1	1	Diaphragm ..	..	..	2	—	—	—	—	—	—	—	—	2	Diaphragm ..	..	..
67	—	—	3	8	20	22	28	10	Stomach ..	..	..	16	—	—	1	8	1	6	5	1	16	Stomach ..	..	..
151	—	3	5	9	37	32	28	37	Other sites ..	..	..	50	—	—	—	—	13	15	8	6	50	Other sites ..	..	..
5	—	—	—	1	2	2	—	1	Chronic rheumatism, etc., Gout	..	..	3	—	—	—	—	—	3	—	—	3	Chronic rheumatism, etc., Gout	..	..
20	—	—	—	2	3	2	3	2	Diabetes ..	..	..	4	—	—	—	—	—	—	—	—	4	Diabetes ..	..	..
232	—	1	1	5	21	46	47	111	Alcoholism	..	..	42	—	—	—	—	—	—	—	—	42	Alcoholism	..	..
75	1	—	11	16	13	11	7	10	Cerebral hemorrhage, etc.	..	..	21	—	1	5	2	9	2	2	17	21	Cerebral hemorrhage, etc.	..	..
187	—	2	9	22	35	44	31	35	Other dis. of the nervous system	..	..	27	—	—	2	4	7	6	5	3	27	Other dis. of the nervous system	..	..
151	—	1	10	11	18	38	28	45	Valvular disease of heart	..	..	55	—	—	4	2	2	14	9	18	55	Valvular disease of heart	..	..
112	—	—	—	—	4	23	19	66	Other heart disease ..	..	..	30	—	—	—	—	2	6	8	14	30	Other heart disease ..	..	..
312	—	—	—	—	—	—	—	—	Arterio-sclerosis ..	..	..	3	—	—	—	—	—	—	—	—	3	Arterio-sclerosis ..	..	..
214	2	10	35	67	44	31	11	14	Other dis. of circulatory system	..	..	73	1	—	4	1	5	16	9	38	73	Other dis. of circulatory system	..	..
13	—	—	—	—	—	—	—	—	Bronchitis ..	..	..	54	1	4	5	8	11	9	7	9	54	Bronchitis ..	..	..
34	—	—	—	—	—	—	—	—	Pneumonia	..	..	17	—	—	1	1	1	5	—	8	17	Pneumonia	..	..
10	—	—	—	—	—	—	—	—	Chronic interstitial pneumonia	..	..	3	—	—	—	—	—	—	—	—	3	Chronic interstitial pneumonia	..	..
27	—	—	—	—	—	—	—	—	Other dis. of respiratory system	..	..	6	—	—	—	—	—	—	—	—	6	Other dis. of respiratory system	..	..
8	—	—	—	—	—	—	—	—	Ulcer of stomach ..	..	..	4	—	—	—	—	—	—	—	—	4	Ulcer of stomach ..	..	..
10	—	—	—	—	—	—	—	—	Ulcer of duodenum ..	..	..	3	—	—	—	—	—	—	—	—	3	Ulcer of duodenum ..	..	..
40	—	—	—	—	—	—	—	—	Appendicitis ..	..	..	6	—	—	—	—	—	—	—	—	6	Appendicitis ..	..	..
27	—	—	—	—	—	—	—	—	Hernia ..	..	..	4	—	—	—	—	—	—	—	—	4	Hernia ..	..	..
8	—	—	—	—	—	—	—	—	Intestinal obstruction ..	..	..	4	—	—	—	—	—	—	—	—	4	Intestinal obstruction ..	..	..
10	—	—	—	—	—	—	—	—	Girrhosis of liver ..	..	..	4	—	—	—	—	—	—	—	—	4	Girrhosis of liver ..	..	..
40	—	—	—	—	—	—	—	—	Other dis. of digestive system	..	..	8	—	—	—	—	—	—	—	—	8	Other dis. of digestive system	..	..
11	—	—	—	—	—	—	—	—	Acute nephritis ..	..	..	2	—	—	—	—	—	—	—	—	2	Acute nephritis ..	..	..
79	—	—	—	—	—	—	—	—	Chronic nephritis ..	..	..	15	—	—	—	—	—	—	—	—	15	Chronic nephritis ..	..	..
14	—	—	—	—	—	—	—	—	Diseases of the prostate	..	..	2	—	—	—	—	—	—	—	—	2	Diseases of the prostate	..	..
17	—	—	—	—	—	—	—	—	Other genito-urinary diseases	..	..	7	—	—	—	—	—	—	—	—	7	Other genito-urinary diseases	..	..
151	—	—	—	—	—	—	—	—	Old age ..	..	..	29	—	—	—	—	—	—	—	—	29	Old age ..	..	..
50	—	—	—	—	—	—	—	—	Suicide ..	..	..	22	—	—	2	4	4	6	4	1	22	Suicide ..	..	..
249	—	—	—	—	—	—	—	—	Accident ..	..	..	76	—	—	18	16	15	8	1	9	76	Accident ..	..	..
116	—	—	—	—	—	—	—	—	Other causes ..	..	..	39	—	—	8	2	10	10	2	4	39	Other causes ..	..	..
2,860	12	111	275	422	475	489	321	755	All causes ..	..	..	731	2	35	77	102	127	140	76	172	731	All causes ..	..	..
251,598	8,700	32,244	73,119	65,247	44,859	18,855	4,494	4,080	Years of life (Census population × 3)	..	..	88,929	4,323	14,904	26,724	20,106	13,584	5,937	1,626	1,725	88,929	Years of life (Census population × 3)	..	..
—	56	98	94	101	92	101	143	136	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	..	..	—	19	67	72	79	81	92	94	73	—	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	..	..
Comparative Mortality Figure (Standardized Death-rate)												Comparative Mortality Figure (Standardized Death-rate)												
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males												Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males												
All Causes—ages 20-65 years.												All Causes—ages 20-65 years.												
Comparative Mortality Figure (Standardized Death-rate)												Comparative Mortality Figure (Standardized Death-rate)												
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males												Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males												
831												831												
81												81												

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

[illegible]

OCCUPATIONAL GROUP 71.—COAL MINE—HEWERS AND GETTERS (042).
(Leicestershire, Warwickshire, and the South Derbyshire Coalfield.†)CAUSE OF DEATH.
For the precise significance of each title and its relation to the frequency of death, see page 1.OCCUPATIONAL GROUP 7b.—COAL MINE—HEWERS AND GETTERS (042).
(Staffordshire (excluding the North Staffordshire Coalfield*), Shropshire, and Worcestershire.)

Mean Annual Death-rate per 100,000.										Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.										
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	70 and upwards.	All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	70 and upwards.	All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and up.		
39	—	—	—	—	—	—	—	—	—	21	—	2	3	3	5	4	2	2	2	19	16	75	16	20	25—	35—	45—	55—	65—	70
63	1	3	9	4	6	9	4	7	439	44	—	8	17	11	4	4	4	—	—	89	75	—	—	—	—	—	—	—	—	221
5	—	—	—	—	—	—	—	—	63	5	—	—	3	—	1	—	—	1	16	—	—	—	—	—	—	—	—	—	—	—
10	—	—	—	—	—	—	—	—	327	7	—	—	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110
2	—	—	—	—	—	—	—	—	17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—	327	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110
102	—	—	—	—	—	—	—	—	1190	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1545
3	—	—	—	—	—	—	—	—	65	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
31	—	—	—	—	—	—	—	—	63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
62	—	—	—	—	—	—	—	—	439	16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	993
2	—	—	—	—	—	—	—	—	63	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110
6	—	—	—	—	—	—	—	—	63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110
53	—	—	—	—	—	—	—	—	1692	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
27	—	—	—	—	—	—	—	—	655	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	188	22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
37	—	—	—	—	—	—	—	—	501	16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
75	—	—	—	—	—	—	—	—	1880	22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
39	—	—	—	—	—	—	—	—	5827	15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
155	—	—	—	—	—	—	—	—	689	42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2980
88	2	3	10	18	19	13	11	12	752	28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110
11	—	—	—	—	—	—	—	—	188	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—	65	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	17	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	65	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	251	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	196	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18	—	—	—	—	—	—	—	—	501	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	65	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	17	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	251	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	196	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18	—	—	—	—	—	—	—	—	501	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	65	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	17	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	251	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	196	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18	—	—	—	—	—	—	—	—	501	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	65	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	17	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	251	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	196	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18	—	—	—	—	—	—	—	—	501	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	65	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	17	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	251	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	196	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18	—	—	—	—	—	—	—	—	501	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	65	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	17	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	251	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	196	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18	—	—	—	—	—	—	—	—	501	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	65	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	17	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	251	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	196	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18	—	—	—	—	—	—	—	—	501	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	65	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	17	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—																									

Years of life (Census population × 3) 62,007

Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100. 57 74 81 73 62 87 88 103

Comparative Mortality Figure (Standardized Death-rate) 763

Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males 75

* For the constitution of the North Staffordshire Coalfield, see page 98.

† For the constitution of the South Derbyshire Coalfield, see page 98.

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

[illegible]

OCCUPATIONAL GROUP 7m.—COAL MINE—HEWERS AND GETTERS (042). (Cumberland.)

OCCUPATIONAL GROUP 71.—COAL MINE—HEWERS AND GETTERS (042).
(Brecknockshire, Carmarthenshire and Pembrokeshire)

CAUSE OF DEATH.																								
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.												Mean Annual Death-rate per 100,000.												
Numbers of Deaths at Ages—												Mean Annual Death-rate per 100,000.												
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.															
	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.
Influenza	8	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Respiratory tuberculosis	8	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other tuberculosis	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Syphilis, etc.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tabes dorsalis	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General paralysis of insane	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Aneurysm	19	—	—	—	—	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cancer, all sites	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Skin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lip	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tongue	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Æsophagus	12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Stomach	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other sites	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chronic rheumatism, etc., Gout	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diabetes	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcoholism	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cerebral hæmorrhage, etc.	14	—	—	—	—	—	—	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of the nervous system	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Valvular disease of heart	13	—	—	—	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other heart disease	20	—	—	—	—	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arterio-sclerosis	4	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of circulatory system	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bronchitis	13	—	—	—	—	—	—	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pneumonia	10	1	1	2	1	1	1	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chronic interstitial pneumonia	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of respiratory system	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ulcer of stomach	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ulcer of duodenum	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Appendicitis	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hernia	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Intestinal obstruction	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cirrhosis of liver	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of digestive system	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acute nephritis	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chronic nephritis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diseases of the prostate	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other genito-urinary diseases	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Old age	17	—	—	—	—	—	—	17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Suicide	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Accident	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other causes	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
All causes	208	5	9	32	29	36	22	17	58	926	328	567	618	1244	1915	5667	14428	—	—	—	—	—	—	—
Years of life (Census population × 3)	18,363	540	2,742	5,640	4,695	2,895	1,149	300	402	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	—	375	93	142	97	108	74	114	106	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Comparative Mortality Figure (Standardized Death-rate)	6,288	6,456	11,406	8,424	5,112	1,902	435	438	1,35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males	109	128	128	100	83	135	198	126	111	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
All Causes—ages 20–65 years.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Comparative Mortality Figure (Standardized Death-rate)	6,288	6,456	11,406	8,424	5,112	1,902	435	438	1,35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males	109	128	128	100	83	135	198	126	111	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

OCCUPATIONAL GROUP 7n. COAL MINE HEWERS AND GETTERS (042). (Gloucestershire and Somersetshire.)												OCCUPATIONAL GROUP 8 10a. COAL MINE UNDERGROUND WORKERS, NOT HEWERS OR SUPERINTENDING STAFF (043-047). (Northumberland.)											
Mean Annual Death-rate per 100,000.												Mean Annual Death-rate per 100,000.											
Numbers of Deaths at Ages—												Numbers of Deaths at Ages—											
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.						
CAUSE OF DEATH.																							
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.																							
Influenza																							
Respiratory tuberculosis																							
Other tuberculosis																							
Syphilis, etc.																							
Syphilis																							
Tuberculosis																							
General paralysis of insane																							
Aneurysm																							
Cancer, all sites																							
Skin																							
Lip																							
Tongue																							
Gastrophagus																							
Stomach																							
Other sites																							
Chronic rheumatism, etc., Gout																							
Diabetes																							
Alcoholism																							
Cerebral hemorrhage, etc.																							
Other dis. of the nervous system																							
Valvular disease of heart																							
Other heart disease																							
Arterio-sclerosis																							
Other dis. of circulatory system																							
Bronchitis																							
Pneumonia																							
Chronic interstitial pneumonia																							
Other dis. of respiratory system																							
Ulcer of stomach																							
Ulcer of duodenum																							
Appendicitis																							
Hernia																							
Intestinal obstruction																							
Cirrhosis of liver																							
Other dis. of digestive system																							
Acute nephritis																							
Chronic nephritis																							
Disorders of the prostate																							
Other genito-urinary diseases																							
Old age																							
Suicide																							
Accident																							
Other causes																							
All causes																							
All causes																							
Years of life (Census population × 3)																							
Ratio of Mortality to that of all Occupied and Retired Civilian Males																							
Ratio of Mortality to that of all Occupied and Retired Civilian Males																							
All Causes—ages 20-65 years.																							
Comparative Mortality Figure (Standardized Death-rate)																							
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																							
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																							
All Causes—ages 20-65 years.																							
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Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																							
All Causes—ages 20-65 years.																							
Comparative Mortality Figure (Standardized Death-rate)																							
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All Causes—ages 20-65 years.																							
Comparative Mortality Figure (Standardized Death-rate)																							
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																							
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																							
All Causes—ages 20-65 years.																							
Comparative Mortality Figure (Standardized Death-rate)																							
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																							
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Comparative Mortality Figure (Standardized Death-rate)																							
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Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																							
All Causes—ages 20-65 years.																							
Comparative Mortality Figure (Standardized Death-rate)																							
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Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																							
All Causes—ages 20-65 years.																							
Comparative Mortality Figure (Standardized Death-rate)																							
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																							
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Comparative Mortality Figure (Standardized Death-rate)																							
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All Causes—ages 20-65 years.																							
Comparative Mortality Figure (Standardized Death-rate)																							
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All Causes—ages 20-65 years.																							
Comparative Mortality Figure (Standardized Death-rate)																							
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																							
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All Causes—ages 20-65 years.																							
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Comparative Mortality Figure (Standardized Death-rate)																							
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OCCUPATIONAL GROUP 8-10c.—COAL MINE—UNDERGROUND WORKERS, NOT HEWERS OR SUPERINTENDING STAFF (043-047).
(Cheshire and Lancashire.)CAUSE OF DEATH.
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.OCCUPATIONAL GROUP 8-10b.—COAL MINE—UNDERGROUND WORKERS, NOT HEWERS OR SUPERINTENDING STAFF (043-047).
(Durham.)

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Mean Annual Death rate per 100,000.										Mean Annual Death rate per 100,000.									
Numbers of Deaths at Ages										Numbers of Deaths at Ages									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	
104	17	5	9	12	27	8	17	17	Influenza ..	63	8	8	9	8	4	15	5	6	Respiratory tuberculosis ..
211	37	58	27	23	15	3	2	2	Respiratory tuberculosis ..	126	20	33	17	19	19	18	1	—	Other tuberculosis ..
41	7	15	4	3	8	—	—	—	Other tuberculosis ..	18	8	4	3	1	6	—	—	—	Syphilis, etc. ..
24	11	15	4	5	—	—	—	—	Syphilis, etc. ..	15	—	—	—	—	—	—	—	—	Syphilis ..
1	—	—	—	—	—	—	—	—	Syphilis ..	1	—	—	—	—	—	—	—	—	Tabes dorsalis ..
2	—	—	—	—	—	—	—	—	Tabes dorsalis ..	—	—	—	—	—	—	—	—	—	General paralysis of insane ..
13	—	—	—	—	—	—	—	—	General paralysis of insane ..	8	—	—	—	—	—	—	—	—	Aneurysm ..
8	1	—	—	—	—	—	—	—	Aneurysm ..	6	—	—	—	—	—	—	—	—	Cancer, all sites ..
207	3	1	—	—	—	—	—	—	Cancer, all sites ..	91	2	—	—	—	—	—	—	—	Skin ..
10	—	—	—	—	—	—	—	—	Skin ..	2	—	—	—	—	—	—	—	—	Lip ..
2	—	—	—	—	—	—	—	—	Lip ..	1	—	—	—	—	—	—	—	—	Tongue ..
6	—	—	—	—	—	—	—	—	Tongue ..	4	—	—	—	—	—	—	—	—	Esophagus ..
2	—	—	—	—	—	—	—	—	Esophagus ..	3	—	—	—	—	—	—	—	—	Stomach ..
72	—	—	—	—	—	—	—	—	Stomach ..	28	—	—	—	—	—	—	—	—	Other sites ..
115	—	—	—	—	—	—	—	—	Other sites ..	53	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..
5	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..	3	—	—	—	—	—	—	—	—	Diabetes ..
23	—	—	—	—	—	—	—	—	Diabetes ..	7	—	—	—	—	—	—	—	—	Alcoholism ..
1	—	—	—	—	—	—	—	—	Alcoholism ..	2	—	—	—	—	—	—	—	—	Cerebral hemorrhage, etc. ..
208	—	—	—	—	—	—	—	—	Cerebral hemorrhage, etc. ..	54	—	—	—	—	—	—	—	—	Other dis. of the nervous system ..
67	—	—	—	—	—	—	—	—	Other dis. of the nervous system ..	30	4	—	—	—	—	—	—	—	Valvular disease of heart ..
148	4	7	9	8	19	40	19	42	Valvular disease of heart ..	62	2	5	4	9	10	18	7	5	Other heart disease ..
106	—	—	—	—	—	—	—	—	Other heart disease ..	55	1	—	—	—	14	20	8	7	Arterio-sclerosis ..
95	—	—	—	—	—	—	—	—	Arterio-sclerosis ..	34	—	—	—	—	2	13	9	10	Other dis. of circulatory system ..
2	—	—	—	—	—	—	—	—	Other dis. of circulatory system ..	1	—	—	—	—	—	—	—	—	Bronchitis ..
222	—	—	—	—	—	—	—	—	Bronchitis ..	112	—	—	—	—	—	—	—	—	Pneumonia ..
148	14	16	12	17	25	29	21	14	Pneumonia ..	108	11	12	7	13	28	24	7	6	Chronic interstitial pneumonia ..
42	—	—	—	—	—	—	—	—	Chronic interstitial pneumonia ..	1	—	—	—	—	—	—	—	—	Other dis. of respiratory system ..
15	—	—	—	—	—	—	—	—	Other dis. of respiratory system ..	12	—	—	—	—	—	—	—	—	Ulcer of stomach ..
10	—	—	—	—	—	—	—	—	Ulcer of stomach ..	9	—	—	—	—	—	—	—	—	Ulcer of duodenum ..
10	—	—	—	—	—	—	—	—	Ulcer of duodenum ..	1	—	—	—	—	—	—	—	—	Appendicitis ..
10	—	—	—	—	—	—	—	—	Appendicitis ..	12	—	—	—	—	—	—	—	—	Hernia ..
10	—	—	—	—	—	—	—	—	Hernia ..	2	—	—	—	—	—	—	—	—	Intestinal obstruction ..
11	—	—	—	—	—	—	—	—	Intestinal obstruction ..	2	—	—	—	—	—	—	—	—	Cirrhosis of liver ..
11	—	—	—	—	—	—	—	—	Cirrhosis of liver ..	10	—	—	—	—	—	—	—	—	Other dis. of digestive system ..
13	—	—	—	—	—	—	—	—	Other dis. of digestive system ..	23	—	—	—	—	—	—	—	—	Acute nephritis ..
43	—	—	—	—	—	—	—	—	Acute nephritis ..	7	—	—	—	—	—	—	—	—	Chronic nephritis ..
8	—	—	—	—	—	—	—	—	Chronic nephritis ..	34	—	—	—	—	—	—	—	—	Diseases of the prostate ..
47	—	—	—	—	—	—	—	—	Diseases of the prostate ..	3	—	—	—	—	—	—	—	—	Other genito-urinary diseases ..
18	—	—	—	—	—	—	—	—	Other genito-urinary diseases ..	4	—	—	—	—	—	—	—	—	Old age ..
19	—	—	—	—	—	—	—	—	Old age ..	36	—	—	—	—	—	—	—	—	Accident ..
134	—	—	—	—	—	—	—	—	Accident ..	12	—	—	—	—	—	—	—	—	Other causes ..
24	—	—	—	—	—	—	—	—	Other causes ..	148	—	—	—	—	—	—	—	—	All causes ..
197	—	—	—	—	—	—	—	—	All causes ..	83	—	—	—	—	—	—	—	—	
108	—	—	—	—	—	—	—	—		1,181	105	115	114	108	200	285	126	128	
2,396	177	166	163	255	480	322	610	339		1,181	105	115	114	108	200	285	126	128	

Years of life (Census population × 3)										Years of life (Census population × 3)									
Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.										Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.									
187,728	52,206	37,896	28,416	22,221	20,316	18,336	5,835	2,502	..	121,752	33,282	25,455	23,184	14,538	13,173	8,769	2,451	900	..
—	137	124	144	108	109	102	111	179	..	—	128	128	123	116	131	126	103	105	..

All Causes—ages 20-65 years.

Comparative Mortality Figure (Standardized Death-rate)

Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

1,106

All Causes—ages 20-65 years.

Comparative Mortality Figure (Standardized Death-rate)

Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

1,257

[illegible]

* For the constitution of the South Derbyshire Coalfield, see page 98.

* For the constitution of the North Staffordshire Coalfield, see page 98.

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

OCCUPATIONAL GROUP 8-10h.—COAL MINE—UNDERGROUND WORKERS, NOT HEWERS OR SUPERINTENDING STAFF (043-047). (Staffordshire (excluding the North Staffordshire Coalfield*), Shropshire and Worcestershire.)												OCCUPATIONAL GROUP 8-10i.—COAL MINE—UNDERGROUND WORKERS, NOT HEWERS OR SUPERINTENDING STAFF (043-047). (Leicestershire, Warwickshire and the South Derbyshire Coalfield)†													
CAUSE OF DEATH.												Numbers of Deaths at Ages—													
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.												Mean Annual Death-rate per 100,000.													
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.					All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.				
Influenza ..	6	2	1	2	1	1	1	—	..	..	..	..	18	2	5	1	3	1	1	1	—	24	30	59	—
Respiratory tuberculosis ..	2	2	—	—	—	—	—	—	..	..	..	..	2	—	—	—	—	—	—	—	24	150	30	116	42
Other tuberculosis ..	—	—	—	—	—	—	—	—	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—	—	—
Syphilis, etc. ..	—	—	—	—	—	—	—	—	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—	—	—
Syphilis ..	—	—	—	—	—	—	—	—	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—	—	—
Tabs dorsalis ..	—	—	—	—	—	—	—	—	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—	—	—
General paralysis of insane ..	—	—	—	—	—	—	—	—	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—	—	—
Aneurysm ..	—	—	—	—	—	—	—	—	..	..	..	..	17	—	—	—	—	—	—	—	3	—	—	—	—
Cancer, all sites ..	—	—	—	—	—	—	—	—	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—	—	—
Skin ..	—	—	—	—	—	—	—	—	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—	—	—
Lip ..	—	—	—	—	—	—	—	—	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—	—	—
Tongue ..	—	—	—	—	—	—	—	—	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—	—	—
Esophagus ..	—	—	—	—	—	—	—	—	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—	—	—
Stomach ..	—	—	—	—	—	—	—	—	..	..	..	..	2	—	—	—	—	—	—	—	—	—	—	—	—
Other sites ..	—	—	—	—	—	—	—	—	..	..	..	..	12	—	—	—	—	—	—	—	3	—	—	—	—
Chronic rheumatism, etc., Gout ..	—	—	—	—	—	—	—	—	..	..	..	..	2	—	—	—	—	—	—	—	—	—	—	—	—
Diabetes ..	—	—	—	—	—	—	—	—	..	..	..	..	1	—	—	—	—	—	—	—	—	—	—	—	—
Alcoholism ..	—	—	—	—	—	—	—	—	..	..	..	..	5	—	—	—	—	—	—	—	—	—	—	—	—
Cerebral hemorrhage, etc. ..	—	—	—	—	—	—	—	—	..	..	..	..	2	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of the nervous system ..	—	—	—	—	—	—	—	—	..	..	..	..	2	—	—	—	—	—	—	—	—	—	—	—	—
Valvular disease of heart ..	—	—	—	—	—	—	—	—	..	..	..	..	9	—	—	—	—	—	—	—	—	—	—	—	—
Other heart disease ..	—	—	—	—	—	—	—	—	..	..	..	..	12	—	—	—	—	—	—	—	—	—	—	—	—
Arterio-sclerosis ..	—	—	—	—	—	—	—	—	..	..	..	..	1	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of circulatory system ..	—	—	—	—	—	—	—	—	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—	—	—
Bronchitis ..	—	—	—	—	—	—	—	—	..	..	..	..	9	—	—	—	—	—	—	—	—	—	—	—	—
Pneumonia ..	—	—	—	—	—	—	—	—	..	..	..	..	9	—	—	—	—	—	—	—	—	—	—	—	—
Chronic interstitial pneumonia ..	—	—	—	—	—	—	—	—	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of respiratory system ..	—	—	—	—	—	—	—	—	..	..	..	..	4	—	—	—	—	—	—	—	—	—	—	—	—
Ulcer of stomach ..	—	—	—	—	—	—	—	—	..	..	..	..	1	—	—	—	—	—	—	—	—	—	—	—	—
Ulcer of duodenum ..	—	—	—	—	—	—	—	—	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—	—	—
Appendicitis ..	—	—	—	—	—	—	—	—	..	..	..	..	1	—	—	—	—	—	—	—	—	—	—	—	—
Hernia ..	—	—	—	—	—	—	—	—	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—	—	—
Intestinal obstruction ..	—	—	—	—	—	—	—	—	..	..	..	..	1	—	—	—	—	—	—	—	—	—	—	—	—
Cirrhosis of liver ..	—	—	—	—	—	—	—	—	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of digestive system ..	—	—	—	—	—	—	—	—	..	..	..	..	3	—	—	—	—	—	—	—	—	—	—	—	—
Acute nephritis ..	—	—	—	—	—	—	—	—	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—	—	—
Chronic nephritis ..	—	—	—	—	—	—	—	—	..	..	..	..	1	—	—	—	—	—	—	—	—	—	—	—	—
Diseases of the prostate ..	—	—	—	—	—	—	—	—	..	..	..	..	—	—	—	—	—	—	—	—	—	—	—	—	—
Other genito-urinary diseases ..	—	—	—	—	—	—	—	—	..	..	..	..	1	—	—	—	—	—	—	—	—	—	—	—	—
Old age ..	—	—	—	—	—	—	—	—	..	..	..	..	8	—	—	—	—	—	—	—	—	—	—	—	—
Suicide ..	—	—	—	—	—	—	—	—	..	..	..	..	1	—	—	—	—	—	—	—	—	—	—	—	—
Accident ..	—	—	—	—	—	—	—	—	..	..	..	..	16	—	—	—	—	—	—	—	—	—	—	—	—
Other causes ..	—	—	—	—	—	—	—	—	..	..	..	..	10	—	—	—	—	—	—	—	—	—	—	—	—
All causes ..	140	19	16	12	6	23	25	15	24	230	481	357	232	968	1885	4310	19512	—	—	—	—	—	—	—	—
Years of life (Census population × 3) ..	21,723	8,262	3,827	3,366	2,589	2,382	1,326	348	123	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	—	93	137	89	36	84	73	86	144	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Comparative Mortality Figure (Standardized Death-rate) ..	748	..	..	..	..	..	..	..	..	..	..	..	984	..	..	..	..	..	..	..	..	..	..	..	..
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..	79	..	..	..	..	..	..	..	..	..	..	..	100	..	..	..	..	..	..	..	..	..	..	..	..

* For the constitution of the North Staffordshire Coalfield, see page 98.
† For the constitution of the South Derbyshire Coalfield, see page 98.

OCCUPATIONAL GROUP 8-101.—COAL MINE.—UNDERGROUND WORKERS, NOT HEWERS OR SUPERINTENDING STAFF (943-947).										OCCUPATIONAL GROUP 8-10m.—COAL MINE.—UNDERGROUND WORKERS, NOT HEWERS OR SUPERINTENDING STAFF (943-947).									
CAUSE OF DEATH.										CAUSE OF DEATH.									
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.										For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.									
Mean Annual Death-rate per 100,000.										Mean Annual Death-rate per 100,000.									
Numbers of Deaths at Ages—										Numbers of Deaths at Ages—									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	
Influenza ..	2	—	—	—	—	—	—	1	1235	2	—	—	—	—	—	—	—	1	1235
Respiratory tuberculosis ..	9	—	—	—	—	—	—	—	855	9	—	—	—	—	—	—	—	—	855
Other tuberculosis ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Syphilis, etc. ..	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
Syphilis ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tabes dorsalis ..	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
General paralysis of insane ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Aneurysm ..	9	—	—	—	—	—	—	—	—	9	—	—	—	—	—	—	—	—	—
Cancer, all sites ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Skin ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lip ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tongue ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Esophagus ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Stomach ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other sites ..	4	—	—	—	—	—	—	—	—	4	—	—	—	—	—	—	—	—	—
Chronic rheumatism, etc., Gout ..	5	—	—	—	—	—	—	—	—	5	—	—	—	—	—	—	—	—	—
Diabetes ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcoholism ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cerebral hemorrhage, etc. ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of the nervous system ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Valvular disease of heart ..	4	—	—	—	—	—	—	—	—	4	—	—	—	—	—	—	—	—	—
Other heart disease ..	7	—	—	—	—	—	—	—	—	7	—	—	—	—	—	—	—	—	—
Arterio-sclerosis ..	2	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—
Other dis. of circulatory system ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bronchitis ..	5	—	—	—	—	—	—	—	—	5	—	—	—	—	—	—	—	—	—
Pneumonia ..	3	—	—	—	—	—	—	—	—	3	—	—	—	—	—	—	—	—	—
Chronic interstitial pneumonia ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of respiratory system ..	2	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—
Ulcer of stomach ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ulcer of duodenum ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Appendicitis ..	2	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—
Hernia ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Intestinal obstruction ..	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
Cirrhosis of liver ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other dis. of digestive system ..	2	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—
Acute nephritis ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chronic nephritis ..	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
Diseases of the prostate ..	2	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—
Other genito-urinary diseases ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Old age ..	3	—	—	—	—	—	—	—	—	3	—	—	—	—	—	—	—	—	—
Suicide ..	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
Accident ..	26	—	—	—	—	—	—	—	—	26	—	—	—	—	—	—	—	—	—
Other causes ..	3	—	—	—	—	—	—	—	—	3	—	—	—	—	—	—	—	—	—
All causes ..	94	8	8	15	10	12	17	12	14815	94	8	8	15	10	12	17	12	12	14815
Comparative Mortality Figure (Standardized Death-rate) ..										Comparative Mortality Figure (Standardized Death-rate) ..									
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..										Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..									
14,529	1,485	2,205	3,792	2,946	2,316	1,290	115	89	1,200	14,529	1,485	2,205	3,792	2,946	2,316	1,290	115	89	1,200
All Causes—ages 20-65 years.										All Causes—ages 20-65 years.									
Comparative Mortality Figure (Standardized Death-rate) ..										Comparative Mortality Figure (Standardized Death-rate) ..									
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..										Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..									
81	245	76	139	181	90	115	89	121	1,347	81	245	76	139	181	90	115	89	121	1,347

[illegible]

OCCUPATIONAL GROUP 11b.—COAL MINE—WORKERS ABOVE GROUND, NOT SUPERINTENDING STAFF (049).																OCCUPATIONAL GROUP 11c.—COAL MINE—WORKERS ABOVE GROUND, NOT SUPERINTENDING STAFF (049).																																																															
Cheshire and Lancashire.)																Yorkshire, West Riding.)																																																															
Mean Annual Death-rate per 100,000.																Mean Annual Death-rate per 100,000.																																																															
Numbers of Deaths at Ages—																Numbers of Deaths at Ages—																																																															
16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.																																																								
20	44	6	3	1	1	1	103	24	19	53	45	35	110	301	495	24	19	53	45	35	110	301	495																																																								
44	6	3	1	1	1	1	103	94	148	126	111	12	142	86	142	94	148	126	111	12	142	86	142																																																								
6	3	1	1	1	1	1	103	35	37	—	22	32	—	—	—	35	37	—	22	32	—	—	—																																																								
3	—	—	—	—	—	—	103	—	—	—	11	—	—	—	—	—	—	—	11	—	—	—	—																																																								
1	—	—	—	—	—	—	103	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
2	—	—	—	—	—	—	103	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
53	2	—	—	—	—	—	1538	12	19	11	45	140	362	946	1062	12	19	11	45	140	362	946																																																									
2	—	—	—	—	—	—	1538	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
1	—	—	—	—	—	—	103	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
7	—	—	—	—	—	—	103	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
14	—	—	—	—	—	—	308	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
29	—	—	—	—	—	—	923	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
1	—	—	—	—	—	—	103	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
4	—	—	—	—	—	—	205	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
36	—	—	—	—	—	—	103	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
21	—	—	—	—	—	—	205	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
41	—	—	—	—	—	—	718	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
33	—	—	—	—	—	—	1128	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
30	—	—	—	—	—	—	1333	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
4	—	—	—	—	—	—	103	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
73	—	—	—	—	—	—	3590	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
39	—	—	—	—	—	—	308	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
3	—	—	—	—	—	—	308	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
6	—	—	—	—	—	—	72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
3	—	—	—	—	—	—	72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
2	—	—	—	—	—	—	72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
11	—	—	—	—	—	—	72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
1	—	—	—	—	—	—	72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
12	—	—	—	—	—	—	72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
5	—	—	—	—	—	—	72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
3	—	—	—	—	—	—	72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
5	—	—	—	—	—	—	72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
21	—	—	—	—	—	—	72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
9	—	—	—	—	—	—	72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
25	—	—	—	—	—	—	72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
23	—	—	—	—	—	—	72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																																																								
537	—	—	—	—	—	—	14667	37	22	45	57	104	182	125	227	437	408	473	635	1216	2867	5376	16065																																																								
Influenza								Influenza								Influenza																																																															
Respiratory tuberculosis								Respiratory tuberculosis								Respiratory tuberculosis																																																															
Other tuberculosis								Other tuberculosis								Other tuberculosis																																																															
Syphilis, etc.								Syphilis, etc.								Syphilis, etc.																																																															
Tubercular								Tubercular								Tubercular																																																															
General paralysis of insane								General paralysis of insane								General paralysis of insane																																																															
Alcoholism								Alcoholism								Alcoholism																																																															
Cancer, all sites								Cancer, all sites								Cancer, all sites																																																															
Skin								Skin								Skin																																																															
Lip								Lip								Lip																																																															
Tongue								Tongue								Tongue																																																															
Oesophagus								Oesophagus								Oesophagus																																																															
Stomach								Stomach								Stomach																																																															
Other sites								Other sites								Other sites																																																															
Chronic rheumatism, etc., Gout								Chronic rheumatism, etc., Gout								Chronic rheumatism, etc., Gout																																																															
Diabetes								Diabetes								Diabetes																																																															
Alcoholism								Alcoholism								Alcoholism																																																															
Cerebral hemorrhage, etc.								Cerebral hemorrhage, etc.								Cerebral hemorrhage, etc.																																																															
Other dis. of the nervous system								Other dis. of the nervous system								Other dis. of the nervous system																																																															
Valvular disease of heart								Valvular disease of heart								Valvular disease of heart																																																															
Other heart disease								Other heart disease								Other heart disease																																																															
Arterio-sclerosis								Arterio-sclerosis								Arterio-sclerosis																																																															
Other dis. of circulatory system								Other dis. of circulatory system								Other dis. of circulatory system																																																															
Bronchitis								Bronchitis								Bronchitis																																																															
Pneumonia								Pneumonia								Pneumonia																																																															
Chronic interstitial pneumonia								Chronic interstitial pneumonia								Chronic interstitial pneumonia																																																															
Other dis. of respiratory system								Other dis. of respiratory system								Other dis. of respiratory system																																																															
Ulcer of stomach								Ulcer of stomach								Ulcer of stomach																																																															
Ulcer of duodenum								Ulcer of duodenum								Ulcer of duodenum																																																															
Appendicitis								Appendicitis								Appendicitis																																																															
Hernia								Hernia								Hernia																																																															
Intestinal obstruction								Intestinal obstruction								Intestinal obstruction																																																															
Cirrhosis of liver								Cirrhosis of liver								Cirrhosis of liver																																																															
Other dis. of digestive system								Other dis. of digestive system								Other dis. of digestive system																																																															
Acute nephritis								Acute nephritis								Acute nephritis																																																															
Chronic nephritis								Chronic nephritis								Chronic nephritis																																																															
Diseases of the prostate								Diseases of the prostate								Diseases of the prostate																																																															
Other genito-urinary diseases								Other genito-urinary diseases								Other genito-urinary diseases																																																															
Old age								Old age								Old age																																																															
Suicide								Suicide								Suicide																																																															
Accident								Accident								Accident																																																															
Other causes								Other causes								Other causes																																																															
All causes								All causes								All causes																																																															
50,994								5,394								9,510								8,979								8,550								6,348								2,325								1,413																							
—								177								116								119								99								105								111								108								118															
29,763								4,911								3,282								5,394								9,510								8,979								8,550								6,348								2,325								1,413							
140								164								102								174								122								130								121								108																							
Comparative Mortality Figure (Standardized Death-rate)								Comparative Mortality Figure (Standardized Death-rate)								Comparative Mortality Figure (Standardized Death-rate)								Comparative Mortality Figure (Standardized Death-rate)								Comparative Mortality Figure (Standardized Death-rate)								Comparative Mortality Figure (Standardized Death-rate)								Comparative Mortality Figure (Standardized Death-rate)								Comparative Mortality Figure (Standardized Death-rate)																							
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males								Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males								Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males								Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males								Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males								Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males								Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males								Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males																							
All Causes—ages 20-65 years.								All Causes—ages 20-65 years.								All Causes—ages 20-65 years.								All Causes—ages 20-65 years.								All Causes—ages 20-65 years.								All Causes—ages 20-65 years.								All Causes—ages 20-65 years.								All Causes—ages 20-65 years.																							
1,943								1,943								1,943								1,943								1,943								1,943								1,943								1,943								1,943															
183								183								183								183								183								183								183								183								183															

OCCUPATIONAL GROUP 11d.—COAL MINE—WORKERS ABOVE GROUND, NOT SUPERINTENDING STAFF (049). (Derbyshire and Nottinghamshire, excluding the S. Derbyshire Coalfield.)													OCCUPATIONAL GROUP 11c.—COAL MINE—WORKERS ABOVE GROUND, NOT SUPERINTENDING STAFF (049). (Staffordshire, Worcestershire, Warwickshire, Shropshire, Leicestershire, and the S. Derbyshire Coalfield.)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Numbers of Deaths at Ages—													Numbers of Deaths at Ages—																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.					All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	Mean Annual Death-rate per 100,000.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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* For the constitution of the South Derbyshire Coalfield, see page 98.

OCCUPATIONAL GROUP III.—COAL MINE—WORKERS ABOVE GROUND, NOT SUPERINTENDING STAFF (049). (Glamorganshire, Monmouthshire, Carmarthenshire, and Brecknockshire.)										OCCUPATIONAL GROUP 12a.—IRON ORE MINE—UNDERGROUND WORKERS, NOT SUPERINTENDING STAFF (054, part*). (Cumberland and Lancashire.)									
Mean Annual Death-rate per 100,000.										Mean Annual Death-rate per 100,000.									
Numbers of Deaths at Ages—										Numbers of Deaths at Ages—									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	
52	2	3	3	9	7	10	7	11	30	13	—	—	2	2	3	2	1	3	Influenza ..
91	5	11	18	28	14	10	3	2	75	25	—	—	6	5	8	2	1	2	Respiratory tuberculosis ..
11	1	5	2	2	1	—	—	—	15	6	—	2	3	3	—	1	—	6	Other tuberculosis ..
18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Syphilis, etc. ..
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Synphitis ..
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Tabes dorsalis ..
13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	General paralysis of insane ..
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Aneurysm ..
13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Cancer, all sites ..
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Skin ..
84	4	2	1	2	1	37	23	6	27	23	—	—	—	—	—	—	—	—	Lip ..
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Tongue ..
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Esophagus ..
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Stomach ..
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other sites ..
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Diabetes ..
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Alcoholism ..
4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Cerebral hemorrhage, etc. ..
85	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other dis. of the nervous system ..
32	2	—	—	—	—	—	—	—	30	7	—	—	—	—	—	—	—	—	Valvular disease of heart ..
58	2	—	—	—	—	—	—	—	30	16	—	—	—	—	—	—	—	—	Other heart disease ..
73	—	—	—	—	—	—	—	—	27	16	—	—	—	—	—	—	—	—	Arterio-sclerosis ..
23	—	—	—	—	—	—	—	—	15	16	—	—	—	—	—	—	—	—	Other dis. of circulatory system ..
3	—	—	—	—	—	—	—	—	—	30	—	—	—	—	—	—	—	—	Bronchitis ..
114	—	—	—	—	—	—	—	—	—	56	—	—	—	—	—	—	—	—	Pneumonia ..
2	—	—	—	—	—	—	—	—	—	162	—	—	—	—	—	—	—	—	Chronic interstitial pneumonia ..
65	2	3	4	12	19	12	2	11	30	96	—	—	—	—	—	—	—	—	Other dis. of respiratory system ..
2	—	—	—	—	—	—	—	—	15	88	—	—	—	—	—	—	—	—	Ulcer of stomach ..
24	1	—	—	—	—	—	—	—	—	24	—	—	—	—	—	—	—	—	Ulcer of duodenum ..
4	—	—	—	—	—	—	—	—	—	9	—	—	—	—	—	—	—	—	Appendicitis ..
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Hernia ..
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Intestinal obstruction ..
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Cirrhosis of liver ..
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Other dis. of digestive system ..
21	1	1	1	—	—	—	—	—	15	13	—	—	—	—	—	—	—	—	Acute nephritis ..
6	—	—	—	—	—	—	—	—	—	16	—	—	—	—	—	—	—	—	Chronic nephritis ..
22	—	—	—	—	—	—	—	—	—	32	—	—	—	—	—	—	—	—	Diseases of the prostate ..
4	—	—	—	—	—	—	—	—	—	17	—	—	—	—	—	—	—	—	Other genito-urinary diseases ..
4	—	—	—	—	—	—	—	—	13	—	—	—	—	—	—	—	—	—	Old age ..
8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Suicide ..
57	—	—	—	—	—	—	—	—	—	7	—	—	—	—	—	—	—	—	Accident ..
16	—	—	—	—	—	—	—	—	—	13	—	—	—	—	—	—	—	—	Other causes ..
75	—	—	—	—	—	—	—	—	45	88	—	—	—	—	—	—	—	—	All causes
49	5	2	8	10	11	6	2	5	—	—	—	—	—	—	—	—	—	—	Comparative Mortality Figure (Standardized Death-rate) ..
1,017	24	35	61	113	170	247	146	221	360	457	456	903	1445	3103	5685	12679	16,044	888	1,884
Years of life (Census population × 3)										Years of life (Census population × 3)									
64,077	6,672	7,500	13,365	12,507	11,763	7,959	2,568	1,743	..	..	..	..	..	..	..	..	..	..	..
—	146	133	114	141	125	121	114	93	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	46	151	119	91	113	90	126	154	546	1,031
All Causes—ages 20-65 years.										All Causes—ages 20-65 years.									
Comparative Mortality Figure (Standardized Death-rate) ..										Comparative Mortality Figure (Standardized Death-rate) ..									
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..										Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..									
1,253										103									

* See note * on page 12.

OCCUPATIONAL GROUP 14a.—MINERS AND QUARRIERS OF IGNEOUS ROCKS (NOT GRANITE) (072).[†]

Numbers of Deaths at Ages—								Mean Annual Death-rate per 100,000.								
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and up.
3	—	—	—	1	—	2	—	—	—	—	—	45	—	147	—	—
9	—	—	—	2	—	4	—	1	—	93	—	90	50	233	—	298
— 3	—	—	—	—	1	—	—	—	—	—	—	90	50	—	—	—
1	—	—	—	1	—	—	—	—	—	—	—	45	—	—	—	—
1	—	—	—	—	1	—	—	—	—	—	—	—	50	—	—	—
— 12	—	—	—	2	—	2	—	5	—	—	—	45	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	90	50	147	427	1488
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	1	—	—	—	—	—	—	—	45	—	—	—	—
7	—	—	—	1	—	2	—	4	—	—	—	45	—	—	427	1190
4	—	—	—	—	1	—	—	1	—	—	—	—	50	147	—	298
— 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— 13	—	—	—	—	—	1	—	—	—	—	—	—	—	73	641	2679
2	—	—	1	—	—	—	—	9	—	—	48	—	—	214	—	—
8	—	—	—	2	2	2	—	2	—	—	—	90	101	147	—	595
9	—	—	—	1	—	—	—	5	—	—	—	45	—	641	1488	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	298	—
— 12	—	—	—	—	—	—	—	7	—	—	—	—	—	—	1068	2083
7	—	—	1	1	—	—	3	2	—	—	48	45	—	641	595	—
— 2	—	—	—	—	1	—	—	—	—	—	—	45	50	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	1	—	—	—	—	—	—	—	50	—	—	—
— 1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— 1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—
— 3	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
— 17	—	—	—	—	—	—	—	17	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—	—	—	—	—	73	214	298
8	—	—	—	—	—	—	—	—	—	—	—	—	—	73	—	—
11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5060
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
128	—	3	3	13	13	16	23	57	—	279	145	584	654	1172	4915	16964

CAUSE OF DEATH.

For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.

[illegible]

OCCUPATIONAL GROUP 12b.—IRON ORE MINE—UNDERGROUND WORKERS, NOT SUPERINTENDING STAFF (054, part*). (Staffordshire and the North Riding of Yorkshire.)

Numbers of Deaths at Ages—										Mean Annual Death-rate per 100,000.							
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		16—	20—	25—	35—	45—	55—	65—	70 and up.
15	1	3	2	4	1	3	—	1	1	58	134	45	89	34	178	—	222
14	1	—	4	4	3	2	—	—	—	58	—	—	89	101	—	—	—
13	—	—	1	—	—	—	1	—	—	—	—	22	22	34	—	190	—
12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	190	—
11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
235	4	7	16	23	23	36	30	96		231	312	359	510	774	2139	5714	21333

All Causes—ages 20–65 years.

Comparative Mortality Figure (Standardized Death-rate)

Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males

	+ +	- -	C C	C C	+ +	+ +
--	-----	-----	-----	-----	-----	-----

† As represented by Stone Miners and Quarriers in Leicestershire, Merionethshire, and Carnarvonshire.

* See note * on page 12.

OCCUPATIONAL GROUP 60a.—COTTON WEAVERS IN TOWNS WHERE ARTIFICIAL HUMIDITY IS USED IN THE MAJORITY OF THE SHEDS (356, part; 370, part).†										OCCUPATIONAL GROUP 60b.—COTTON WEAVERS IN TOWNS WHERE ARTIFICIAL HUMIDITY IS NOT USED IN THE MAJORITY OF THE SHEDS (356, part; 370, part).†									
CAUSE OF DEATH.										CAUSE OF DEATH.									
For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.										For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.									
Mean Annual Death-rate per 100,000.										Mean Annual Death-rate per 100,000.									
Numbers of Deaths at Ages—										Numbers of Deaths at Ages—									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.		All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	
19	2	1	1	1	1	1	1	2	Influenza ..	6	2	—	—	—	—	—	—	2	Respiratory tuberculosis ..
38	1	—	—	—	—	—	—	—	Respiratory tuberculosis ..	12	—	—	—	—	—	—	—	—	Other tuberculosis ..
5	—	—	—	—	—	—	—	—	Other tuberculosis ..	5	—	—	—	—	—	—	—	—	Syphilis, etc. ..
4	—	—	—	—	—	—	—	—	Syphilis, etc. ..	1	—	—	—	—	—	—	—	—	Syphilis ..
2	—	—	—	—	—	—	—	—	Tabes dorsalis ..	—	—	—	—	—	—	—	—	—	General paralysis of insane ..
2	—	—	—	—	—	—	—	—	General paralysis of insane ..	—	—	—	—	—	—	—	—	—	Aneurysm ..
41	—	—	—	—	—	—	—	—	Aneurysm ..	27	—	—	—	—	—	—	—	—	Cancer, all sites ..
2	—	—	—	—	—	—	—	—	Cancer, all sites ..	—	—	—	—	—	—	—	—	—	Skin ..
2	—	—	—	—	—	—	—	—	Skin ..	—	—	—	—	—	—	—	—	—	Lip ..
2	—	—	—	—	—	—	—	—	Lip ..	—	—	—	—	—	—	—	—	—	Tongue ..
4	—	—	—	—	—	—	—	—	Tongue ..	2	—	—	—	—	—	—	—	—	Esophagus ..
11	—	—	—	—	—	—	—	—	Esophagus ..	2	—	—	—	—	—	—	—	—	Stomach ..
22	—	—	—	—	—	—	—	—	Stomach ..	9	—	—	—	—	—	—	—	—	Other sites ..
22	—	—	—	—	—	—	—	—	Other sites ..	14	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..
3	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout ..	—	—	—	—	—	—	—	—	—	Diabetes ..
3	—	—	—	—	—	—	—	—	Diabetes ..	4	—	—	—	—	—	—	—	—	Alcoholism ..
—	—	—	—	—	—	—	—	—	Alcoholism ..	16	—	—	—	—	—	—	—	—	Cerebral hemorrhage, etc. ..
11	—	—	—	—	—	—	—	—	Cerebral hemorrhage, etc. ..	5	—	—	—	—	—	—	—	—	Other dis. of the nervous system ..
23	—	—	—	—	—	—	—	—	Other dis. of the nervous system ..	—	—	—	—	—	—	—	—	—	Valvular disease of heart ..
32	—	—	—	—	—	—	—	—	Valvular disease of heart ..	20	—	—	—	—	—	—	—	—	Other heart disease ..
21	—	—	—	—	—	—	—	—	Other heart disease ..	21	—	—	—	—	—	—	—	—	Arterio-sclerosis ..
1	—	—	—	—	—	—	—	—	Arterio-sclerosis ..	8	—	—	—	—	—	—	—	—	Other dis. of circulatory system ..
48	—	—	—	—	—	—	—	—	Other dis. of circulatory system ..	—	—	—	—	—	—	—	—	—	Bronchitis ..
30	—	—	—	—	—	—	—	—	Bronchitis ..	20	—	—	—	—	—	—	—	—	Pneumonia ..
—	—	—	—	—	—	—	—	—	Pneumonia ..	10	—	—	—	—	—	—	—	—	Chronic interstitial pneumonia ..
7	—	—	—	—	—	—	—	—	Chronic interstitial pneumonia ..	—	—	—	—	—	—	—	—	—	Other dis. of respiratory system ..
5	—	—	—	—	—	—	—	—	Other dis. of respiratory system ..	2	—	—	—	—	—	—	—	—	Ulcer of stomach ..
4	—	—	—	—	—	—	—	—	Ulcer of stomach ..	1	—	—	—	—	—	—	—	—	Ulcer of duodenum ..
4	—	—	—	—	—	—	—	—	Ulcer of duodenum ..	5	—	—	—	—	—	—	—	—	Appendicitis ..
5	—	—	—	—	—	—	—	—	Appendicitis ..	—	—	—	—	—	—	—	—	—	Hernia ..
10	—	—	—	—	—	—	—	—	Hernia ..	—	—	—	—	—	—	—	—	—	Intestinal obstruction ..
—	—	—	—	—	—	—	—	—	Intestinal obstruction ..	—	—	—	—	—	—	—	—	—	Cirrhosis of liver ..
15	—	—	—	—	—	—	—	—	Cirrhosis of liver ..	2	—	—	—	—	—	—	—	—	Other dis. of digestive system ..
4	—	—	—	—	—	—	—	—	Other dis. of digestive system ..	—	—	—	—	—	—	—	—	—	Acute nephritis ..
37	—	—	—	—	—	—	—	—	Acute nephritis ..	—	—	—	—	—	—	—	—	—	Chronic nephritis ..
10	—	—	—	—	—	—	—	—	Chronic nephritis ..	2	—	—	—	—	—	—	—	—	Diseases of the prostate ..
27	—	—	—	—	—	—	—	—	Diseases of the prostate ..	6	—	—	—	—	—	—	—	—	Other genito-urinary diseases ..
—	—	—	—	—	—	—	—	—	Other genito-urinary diseases ..	3	—	—	—	—	—	—	—	—	Old age ..
—	—	—	—	—	—	—	—	—	Old age ..	13	—	—	—	—	—	—	—	—	Suicide ..
—	—	—	—	—	—	—	—	—	Suicide ..	5	—	—	—	—	—	—	—	—	Accident ..
—	—	—	—	—	—	—	—	—	Accident ..	4	—	—	—	—	—	—	—	—	Other causes ..
—	—	—	—	—	—	—	—	—	Other causes ..	8	—	—	—	—	—	—	—	—	All causes ..
458	9	10	35	33	64	92	71	144	All causes ..	213	6	11	12	16	25	47	31	65	
29,937	2,784	4,227	6,654	6,147	5,913	3,075	885	882	Years of life (Census population × 3) ..	19,080	2,187	2,658	4,287	3,867	3,405	1,743	459	474	
—	131	67	132	84	104	116	161	124	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100.	—	111	118	70	65	63	105	135	101	
Comparative Mortality Figure (Standardized Death-rate) ..										Comparative Mortality Figure (Standardized Death-rate) ..									
Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..										Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..									
1,065										834									
106										82									

† The County Borough of Blackburn, the Municipal Boroughs of Bacup, Chorley, Darwen, and Rawtenstall.

All Causes—ages 20-65 years.

Comparative Mortality Figure (Standardized Death-rate)

Deaths actually recorded per 100 which would have occurred at the rates for all Occupied and Retired Civilian Males ..

834

82

MORTALITY OF MALES IN SEVERAL OCCUPATIONS, 1921-23.

[illegible]

APPENDIX A.

METHODS OF STATING SOCIAL AND OCCUPATIONAL MORTALITY EMPLOYED IN THIS REPORT.

For the detailed study of social and occupational mortality there is fortunately no need to discuss the method to be employed, which is evidently that of studying the age group mortalities recorded for the different causes. In practice, however, some method of summarizing this very copious material is found to be required, owing to the difficulty of assimilating and retaining the amount of detail provided by the rates referred to in such manner as to make them of practical use for the purpose of instituting the comparisons desired. And when summarizing is undertaken two types of question arise—(1) as to the material to be summarized, and (2) as to the method of summarization.

Two minor changes have been made in determining the summarized mortalities employed in the present supplement, one affecting the material summarized, and the other the method of summarization; while extensive use has been made of an alternative, in the shape of the ratio of “actual” to expected deaths, to the form of summary (comparative mortality figure) chiefly employed.

The change in regard to material summarized is one which can only exceptionally (as in the case of barristers, discussed on page xci) be of any serious consequence. Whereas hitherto mortality at ages 25–65 alone has been used in calculating the C.M.F., that for ages 20–25 also is now taken into consideration. This has been done in the belief that the average worker has at the age of 20 been sufficiently long subjected to the environmental influences of his occupation to make definite influence upon his mortality possible. Freedom to make the change was afforded by the fact that considerations of continuity, which might otherwise have forbidden it, were ruled out by the changes in occupational classification made in the 1921 census (*see* page v).

The change in the method of summarizing the age group mortalities in the C.M.F. (and the same procedure is applied in obtaining the “ratio of actual to expected deaths”) is of more general importance. The population employed as the standard of comparison is not, as formerly, that of all males, but that of occupied and retired civilian males (*i.e.*, males engaged in or retired from a civilian occupation).

The reason for this change, the effect of which is by no means negligible, is that the population in each occupation dealt with consists of occupied and retired civilians alone, and it is therefore appropriate that the standard of comparison should be similar. Entry into any occupation implies a certain rough test of health—the imbecile and the bedridden invalid do not become occupied. This “weeding-out” process results in an excess of mortality for the never occupied at all ages up to 55, but declining with advance of age from a maximum of 232 per cent. at 16–20 to 8 per cent. at 45–55, after which other considerations dominate the comparison (Table *a*). The situation was complicated in 1921 by the inclusion amongst the numbers enumerated of many “ex-service” men who had never followed any civilian occupation before enlistment and whose health on discharge from military service during or after the war had prevented their doing so then. Naturally, the mortality rates of this war wreckage were very high, but their potential rates in time of peace would have been low, as they had all been accepted as physically fit for service. They are dealt with in Table *a* just as ex-service men would have to be in ordinary times of peace, by deducting them like all other occupied and retired males from the all males total in order to obtain the number of the “never occupied”—those for whom there is no record in census and death registers of present or past occupation.

The “occupied and retired” of Table *a* (col. B) differ from those tabulated on page 2 of the Abstracts (col. D), who form the standard for occupational mortality comparison, in including occupied and retired non-civilians (Table *d*). These, like the corresponding civilians, must evidently be deducted from the “all males” total to arrive at the “never occupied” (col. C), but it seems best, in dealing with the mortality of civilian occupations, to use the total civilian mortality experience as standard, excluding non-civilian experience as based on selected lives and subject to special risks not applying to the civilian populations under consideration.

The “occupied and retired non-civilians” in Table *d* include only men for whom there was no record of any civil occupation, all other “ex-service” men being classed to the civil occupation followed before or after military service. As the mortality of war invalids must have been high amongst these previously occupied men as well as amongst those without record of civil occupation all the occupational rates quoted are subject to slight discount as being somewhat increased from this cause. But the records permitted of no other course than that followed, and the effect of this factor upon the mortality of any occupation during 1921–23 must be slight.

After the age of 55 other considerations than selection of the physically and mentally fit for occupation, which no doubt play a part at earlier ages also, dominate the comparison.

Statement on the census schedules of the former occupation of retired males tends to be omitted as life advances, whereas in death registration statement of occupation can nearly always be obtained. The result is that in old age the population returned as occupied or retired is too small to correspond with the deaths similarly returned, so that the mortality of occupations is exaggerated, and that of the never occupied correspondingly understated. But as this source of error applies to each occupation individually in greater or less degree, as well as to the total occupied and retired, comparison of the more or less overstated mortality returned in old age for any occupation with the correctly stated mortality returned at the same age for all males jointly, exaggerates the mortality, at this time of life, of every occupation dealt with.

TABLE a.—*Mortality in relation to Statement of Occupation.*
Death-rates per 100,000 living at various Ages in 1921–23.

Age.	A. All Males.	B. All Occupied and Retired Males (including those dealt with in Table d).	C. Never Occupied Males (Code Nos. 990, 991 and X).	D. Occupied and Retired Civilian Males (excluding those dealt with in Table d).	Ratio of Rates C and D to A taken as 1,000.		
					A.	C.	D.
16—	288	245	956	247	1,000	3,319	858
20—	369	354	968	352	1,000	2,623	954
25—	419	411	980	399	1,000	2,339	952
35—	658	653	1,087	639	1,000	1,652	971
45—	1,170	1,169	1,260	1,156	1,000	1,077	988
55—	2,549	2,584	1,306	2,572	1,000	512	1,009
65—	4,792	5,006	1,210	4,991	1,000	253	1,042
70 and over	11,138	13,620	1,194	13,586	1,000	107	1,220

Deaths at Rates A and D amongst Occupied and Retired Civilian Males.

Age.	Years of Life.	Deaths at Rates.		Deaths up to and including each Age.		Deaths up to and including each Age, taking those at Rates A as 1,000.	
		A.	D (Recorded Deaths).	A.	D (Recorded Deaths).	A.	D.
20—	4,022,073	14,841	14,151	14,841	14,151	1,000	954
25—	7,542,300	31,602	30,111	46,443	44,262	1,000	953
35—	7,274,280	47,865	46,495	94,308	90,757	1,000	962
45—	6,262,878	73,276	72,408	167,584	163,165	1,000	974
55—	4,013,049	102,293	103,219	269,877	266,384	1,000	987
65—	1,262,496	60,499	63,017	330,376	329,401	1,000	997
70 and over	1,255,659	139,855	170,589	470,231	499,990	1,000	1,063

It will be seen that the large excess of mortality naturally recorded for the “never occupied” in early life gradually decreases as age advances until at 55–65 it is replaced by fictitious excess for the occupied, which rapidly increases as age further advances.

For this reason the mortality of all males at all ages forms an unsuitable measure with which to compare that of any category of occupied and retired males at all ages.

For, as shown by the lower portion of Table a, the aggregate mortality up to any period of life of the total occupied and retired civilian population, which, of course, represents the average for, and so typifies, all the occupations dealt with, is in fairly close agreement

with, but a little lower than, that for all males up to age 70, at which the correspondence is very close indeed, but when ages over 70 are included a large difference suddenly arises. Mortality at all ages over 20 comes out 6.3 per cent. higher, when the deaths at 70 and over are calculated at the exaggerated rates applying to these ages in the records of the occupied and retired, than when calculated at the undistorted rates applying to the total population. But it is the rates typified by those marked D in the table, distorted in a degree varying much, no doubt, with the occupation, which have to be used in calculating occupational mortality. Hence, if the mortality at all ages over 20 of any occupation is calculated, it must tend, on comparison with the corresponding mortality for all males, to be overstated to an extent amounting on average to about 6.3 per cent. If, on the other hand, comparison is restricted to ages 20-65 (*see* page 124), as in the present report, but is made with the experience for all males of like age, occupational mortality tends to be understated to an average extent of 1.3 per cent., owing to the fact that a population, physically selected to some extent by the very fact of employment, is being unjustifiably compared with a standard to which that selection does not apply.

This source of error disappears, so far as the general tendency is concerned, when, as in the present report, comparative mortality figures, and ratios of actual to expected deaths, are based on the mortality experience of occupied and retired civilians, and not of all males—*i.e.*, when the standard population employed in calculating the C.M.F. (comparative mortality figure) is that which would yield 1,000 deaths at the mortality rates, not for all males, but for all occupied and retired civilians, and when the “expected” deaths are those which would have occurred at the same rates. But when, as in previous reports, the rates applying to all males are used for these calculations, occupational mortality is understated if, at the ages taken into account, these rates yield a larger aggregate number of deaths than the rates for occupied and retired civilians, and overstated if they yield a smaller number. In the present report the C.M.F. is a standardized mortality rate, at ages 20-65 jointly, derived from a sample of the occupied and retired civilian population at these ages in 1921 having the age distribution of this population and of such a size as to yield, at the mortality rates recorded for this population during 1921-23, exactly 1,000 deaths. Each occupational C.M.F. is therefore greater or less than the occupational average in proportion as it is more or less than 1,000.

The standard population now used numbers 109,296, of whom 15,099 are aged from 20 to 25, 28,313 from 25 to 35, 27,308 from 35 to 45, 23,511 from 45 to 55, and 15,065 from 55 to 65. If these numbers had been so chosen as to yield 1,000 deaths at the slightly higher mortality rates for all males their total would have been 108,444, and the deaths at rates comparable with those of the occupations 987, the difference between this figure and 1,000 representing the average extent to which the C.M.F. calculated by the old method would have understated occupational mortality. The difference may probably be regarded as one of point of view, but it is more convenient in practice to represent the average occupational mortality as 1,000 than as 987. The case is similar with the ratio of actual to expected deaths. This also understates occupational mortality, when the expected deaths are calculated at the rates for all males, if at the ages taken into account the total mortality of all males is greater than that of the occupied and retired, and overstates it if the all males mortality is less. For in the first case the standard with which the actual deaths are compared is too high, and therefore the ratio too low, and in the second case the standard of comparison is too low, and the resultant ratio too high. Hence, if the ages compared are restricted to 20-65, at which the mortality of occupied and retired civilians is 1.3 per cent. below that of all males (Table *a*) the “expected” deaths calculated are in excess of those to be expected at rates applicable to occupations, and mortality is slightly understated in consequence. But if all ages are brought into the comparison the “expected” deaths calculated fall short of those to be expected of the occupied and retired civilian population in the proportion 1,000 : 1,063, and comparison of the actual deaths with this low standard considerably overstates occupational mortality. Occupational mortality rates in general being subject to a prejudiced error (overstatement in old age) from which the rates for all males are free, the standard by which to measure the mortalities of particular occupations must embody the same error in average degree if all alike are not to be subject to distortion, in this case overstatement by comparison with too low a standard.

The difference in the results derived from the application of the mortality rates for all males to the occupational populations at all ages and at ages up to 65 is well exemplified by Table III of the Report for 1910-12. This table compares the actual deaths in each occupation with those which would have occurred had it been subject to the rate of mortality experienced by all males. The latter are calculated (*a*) at all ages over 15 and (*b*) at ages 25-65 only. Comparison of the ratios of the actual deaths to the numbers resulting from

these two calculations shows that those yielded by basis (a) are nearly always in excess, and frequently in large excess, of those resulting from basis (b). A few illustrations may be given: Farmers (a) 80·4, (b) 63·1; Agricultural labourers (a) 76·4, (b) 59·0; Gamekeepers (a) 87·6, (b) 60·6; Clergymen, priests, ministers (a) 75·1, (b) 59·7; Coal miners (a) 103·4, (b) 91·2; Cotton manufacture (a) 115·8, (b) 100·8; Wool, worsted manufacture, (a) 118·7, (b) 102·0; and textile dyers, finishers, &c. (a) 119·6, (b) 107·2. In the ratios marked (a) the actual deaths yielding the overstated (Table a) occupational mortality at ages 65 and upwards are compared with the deaths yielded by the undistorted general death-rate at each age. The result is naturally to increase this ratio (actual deaths per cent. of calculated) beyond that representing the facts, in proportion to (1) the excess of the occupational mortality at 65 and upwards, due to the defect in the population discussed above, and (2) the weight or relative importance of this aged population in determining the general adult death-rate.

The mortality records in 1921-23 of two of the occupations quoted above* are analysed in Table b to show why the ratios derived from basis (a) are so much higher than those from basis (b) while a third occupation, barmen, which yields the opposite result, is similarly dealt with.

The proportion of agricultural labourers at ages 70 and upwards, 57,356 per million, is relatively high, and the weight attaching to their mortality correspondingly great. This mortality moreover is relatively high, amounting to 121 per cent. of that for all males, whereas at lower ages the corresponding ratios range from 59 to 83 per cent. of the all males rates. Consequently by taking these late deaths into account we add to the aggregate of preceding mortality a relatively high rate with a high weight attaching to it, the result being to send the ratio of actual to calculated deaths suddenly up, from 69 per cent. at ages 16-70, to 90. Consideration of the last column of the table shows that this figure is quite too high to represent the general facts for agricultural labourers.

The 21 per cent. excess of recorded deaths of agricultural labourers at 70- over those calculated at the rate for all males happens to be much the same as that of 22 per cent. for occupied and retired civilians in general (Table a), and on page 7, accordingly, where the latter rates are taken as standard, agricultural labourers' ratio at this age is 100. But at all earlier ages their rates are much below this standard, ranging as they do from 63 to 87 per cent. of it. As it may be presumed that this advantage is not in fact wholly lost in old age, the apparent equality recorded for these workers with other occupations seems to imply for them overstatement of mortality in old age in special degree. This indeed is to be expected, having regard to the origin of the overstatement in general.

Omission of statement of former occupation on the census schedules may be expected to increase down the social scale, and we find accordingly that the margin by which the mortality of Class V. exceeds that of Class I., after decreasing with advancing age from 111 per cent. at 16-20 to 17 per cent. at 65-70, suddenly increases at 70- to 40 per cent. (Diag. 1). This sudden reversal of the tendency for class mortalities to approximate, as the age approaches at which all must die, is presumably due to greater overstatement of mortality for Class V. than for Class I. as the result of more understatement in old age of the numbers retired from Class V. occupations.

The next occupation in Table b, the clergy, shows that inclusion of the higher ages in the comparison may lead to overstatement of relative mortality even where there is reason to suppose that the occupational mortality at these ages is little overstated. In this case, such an assumption is intrinsically probable. It is very unlikely that the name of a retired clergyman would be entered on a census schedule without record of his former occupation. And there is evidence in the returns that this is so. At ages under 70 the ratios of clerical to total mortality on the all males basis in Table b are in close agreement with those on the occupied and retired basis on page 78, the greatest difference being between 83 per cent. on the latter basis, and 87 on the former, at 65-70. But at 70 and over the ratio on the occupied and retired basis falls to 74, and that on the all males basis rises to 90 per cent. Presumably, the ratio on the all males basis rises from 87 to 90, because in old age the mortality of all sections of the population tends towards equality. The ratio on the occupied and retired basis falls from 83 to 74, because of the overstatement of mortality at these ages in other occupations. So the sudden increase of the difference from 83-87 to 74-90 implies that this overstatement is less for the clergy than for other people. Relatively, at least, it may be taken not to exist. But although this late

* Neither the agricultural labourers nor the clergy in Table b are precisely the same as in 1910-12, for the former now include shepherds, excluded before, and the latter are restricted to the Church of England, whereas the clergy of 1910-12 included all denominations. This group has now been divided into three, and its largest component, the Anglican clergy, selected to represent the former composite group, but neither of these changes of occupational classification can materially affect the question discussed.

mortality is not overstated for the clergy, its addition to the reckoning leads to sudden and unreasonable increase of their proportionate mortality, from 60 per cent. of average at 25-65 (467/775) to 79 per cent. (1685/2139) at all ages over 16. This is due entirely to the extraordinary weight attaching to the higher age groups in this occupation. Whereas 3.55 per cent. of the occupied and retired as a whole are over 70 years of age, this proportion rises for the clergy to over 13 per cent. The sudden rise with age from 60 to 79

TABLE b.—*Comparison of the cumulative effect throughout life of the Mortality actually experienced in certain Occupations in 1921-23 with that which would have resulted at the Rates applying to the General Male Population.*

Age.	Years of Life.	Age Dis-tribution.	Mortality of Total Male Population (per 100,000 living).	Calculated Deaths at foregoing Rates.	Re-corded Deaths.	Re-corded Deaths per cent. of Cal-culated.	Deaths up to and including each Age.		
							Cal-culated.	Re-corded	Re-corded per cent. of Cal-culated.
5. Agricultural Labourers.									
16— ...	255,525	159,276	288	736	437	59	736	437	59
20— ...	196,947	122,763	369	727	605	83	1,463	1,042	71
25— ...	278,406	173,540	419	1,167	947	81	2,630	1,989	76
35— ...	252,903	157,642	658	1,664	1,053	63	4,294	3,042	71
45— ...	243,096	151,529	1,170	2,844	1,775	62	7,138	4,817	67
55— ...	206,295	128,590	2,549	5,258	3,563	68	12,396	8,380	68
65— ...	79,098	49,304	4,792	3,790	2,870	76	16,186	11,250	69
70 and over ...	92,016	57,356	11,138	10,249	12,444	121	26,435	23,694	90
All Ages over 16	1,604,286	1,000,000	—	26,435	23,694	90	—	—	—
134. Clergymen (Anglican Church).									
16— ...	—	—	288	—	—	—	—	—	—
20— ...	210	2,886	369	1	—	—	1	—	—
25— ...	7,578	104,152	419	32	15	47	33	15	45
35— ...	14,166	194,698	658	93	56	60	126	71	56
45— ...	17,427	239,517	1,170	204	113	55	330	184	56
55— ...	17,472	240,135	2,549	445	283	64	775	467	60
65— ...	6,414	88,154	4,792	307	267	87	1,082	734	68
70 and over ...	9,492	130,458	11,138	1,057	951	90	2,139	1,685	79
All Ages over 16	72,759	1,000,000	—	2,139	1,685	79	—	—	—
153. Barmen.									
16— ...	7,311	131,382	288	21	21	100	21	21	100
20— ...	9,639	173,217	369	36	51	142	57	72	126
25— ...	15,141	272,090	419	63	100	159	120	172	143
35— ...	11,223	201,682	658	74	180	243	194	352	181
45— ...	7,284	130,897	1,170	85	176	207	279	528	189
55— ...	3,513	63,130	2,549	90	159	177	369	687	186
65— ...	966	17,359	4,792	46	59	128	415	746	180
70 and over ...	570	10,243	11,138	63	59	94	478	805	168
All Ages over 16	55,647	1,000,000	—	478	805	168	—	—	—

per cent., even when the correct mortality of clergymen is compared with the correct mortality of all males, shows that there is much to be said for restricting comparison to ages under 65, even apart from the general overstatement of occupational mortality at higher ages.

Inclusion of the high and inevitable mortality of old age, which has weight in proportion to the healthiness of occupations during working life, must tend towards the levelling of all occupational mortality rates, by increasing most those of the healthiest occupations.

Age ultimately triumphs over hygiene, and if we wish to measure the effects of hygiene, we can do so better where they are not swamped by those of age. It was presumably this consideration which led Dr. Farr, in the Supplement to the Thirty-fifth Report (Table 63), to indicate the period of life between 25 and 65 years of age as that in which "the influence of profession is most felt," so that from that date summarization of occupational mortalities has been restricted to these ages, except for the new alternative age basis in Table III. of the Report for 1910-12 and for inclusion of 20-25 in the present report. However this may be, restriction to ages under 65 had also incidentally the salutary result of eliminating the effects of occupational mortality overstatement at higher ages.

The third occupation dealt with in Table *b*, that of barman, is included to illustrate the few cases in which the ratio of recorded to calculated deaths is decreased by addition of those at ages over 65. In this case mortality is excessive at 35-65, and moderate amongst the few who survive the latter age. Moderately low mortality, with little weight attached, adds comparatively few recorded deaths at ages over 65 to those in earlier life, and consequently the proportion to the calculated total is less when these ages are taken into account. This result is evidently more likely to occur with occupations in which the advanced ages have low weight, generally as the result of high mortality earlier in life, and we find accordingly that the instances of its occurrence in Table III of the Report for 1910-12 are chiefly found towards the end of the table, where mortalities are highest.

The most notable of these are:—

				Percentage of Actual to Expected Deaths.	
				Ages 15 and upwards.	Ages 25-65.
Barmen	..	..	..	201·6	243·3
Costermongers, Hawkers	..	..	..	161·0	186·7
Messengers, Porters and Watchmen	..	..	..	119·7	142·9
Dock Labourers	..	..	..	132·5	143·1
Tin Miners	..	..	..	189·8	200·0

A few instances may now be given of the results of different bases of comparison of occupational mortalities during 1921-23:—

TABLE c.—*Comparison of the Results of various Methods of stating the Mortality of certain Occupations.*

Occupation Group No.		Recorded Deaths per cent. of Deaths calculated at Rates for				Comparative Mortality Figure (based on Ages 20-65 and Rates for Occupied and Retired Civilians).
		All Males.		Occupied and Retired Civilian Males.		
		All Ages over 16.	Ages 20-65.	All Ages over 16.	Ages 20-65.	
		(1)	(2)	(3)	(4)	(5)
	All Males	100	100	94	101	1,013
	All Occupied and Retired Civilians ...	106	99	100	100	1,000
	Social Class I	91	82	84	82	812
	" II	103	93	96	94	942
	" III	101	94	96	95	951
	" IV	106	99	100	101	1,007
	" V	127	124	120	125	1,258
1	Farmers, &c....	85	67	77	67	674
3	Farm Bailiffs	91	54	85	54	526
5	Agricultural Labourers, &c. ...	90	68	83	69	688
16	Cement Workers, Lime Burners, &c. ...	85	71	81	72	717
79	Carpenters... ..	94	83	87	84	843
96	Platelayers	112	91	106	92	920
108	Railway Signalmen	84	63	79	63	622
134	Clergymen (Anglican Church) ...	79	60	71	60	561
151	Gamekeepers	107	64	97	65	667
18	Potters, &c.	155	163	150	166	1,642
20	China, &c., Kiln and Oyen Men ...	169	180	167	183	1,830
38	File Cutters	176	182	164	182	1,851
40A	Cutlery Grinders	281	324	272	330	3,295
75	Cellarmen	140	149	133	150	1,510
101	Brush Makers	123	125	113	126	1,320
137	Barristers	103	106	93	107	1,171
153	Barmen	168	192	167	196	1,955

Occupied and retired civilians as a whole show slight advantage (1 per cent.) when comparison on the basis of the all males rates is restricted to ages 20-65, as the result of exclusion of the unfit from occupation. But when all ages are taken into account the overstatement of mortality for the occupied at the higher ages converts this advantage into a disadvantage of 6 per cent., as already seen in Table *a*. This increase of mortality when all ages are taken into account, (using the mortality rates for all males), applies to each of the social classes. In fact Class I, which includes only about 2 per cent. of the occupied population, is the only one to record a death-rate below the general average on this basis of comparison, a fact which of course suffices to demonstrate the unsuitability of the basis. The excess of the ratio in col. 1 over that in col. 2 is greatest for Classes I and II and least for Class V, as is to be expected in view of the instances of reversal of this excess already discussed amongst occupations of high mortality. And as between cols. 3 and 4 such reversal actually occurs for Classes IV and V.

The first nine occupations in the table have been selected as instances of large difference between the ratios applying to mortality at all ages over 16 (col. 1) and at ages 20-65 (col. 2). All these are occupations of low mortality during the working period of life, and in each case the effect of taking the overstated occupational mortality at ages over 65 into consideration is to increase the ratio and so produce a result showing the occupation in a much less favourable light. This unfortunate result is in all cases lessened, often very considerably, in col. 3, by the use as standard of the mortality rates for the occupied and retired, which share in average degree the overstatement applying in varying degree to the occupational rates at the higher ages. But restriction of the ages taken into consideration, so as to exclude those over 65, which are so liable to overstatement of mortality and so little influenced by environmental conditions, has still greater effect. Indeed, when the ages subject to overstatement are excluded the result is much the same whichever rates are used as standard. This is to be expected in view of the close similarity between the results of applying the two sets of rates to all occupied and retired civilians at ages 20-65 (Table *a*). But when all ages are taken into consideration the ratios obtained are higher if comparison is made by using the approximately correct rates for all males than if it is made by means of the overstated rates for the occupied and retired, for in the former case we are comparing overstated recorded mortality with correctly estimated expected mortality, and in the latter case we are comparing this overstated mortality with expected mortality estimated on a basis allowing for average overstatement, and so more fairly comparable with the recorded mortality. It is clear therefore that if all ages are to be taken into account the mortality used as standard should be that for occupied and retired civilians, and it has been seen that if ages over 65 are excluded the results are much the same whichever rates are used.

But though the difference is small, use of the rates for occupied and retired civilians is to some extent preferable as providing the fairer comparison, by excluding on both sides the high mortality (Table *a*) of the unemployable in early adult life. Thus whether all ages or only ages 20-65 are dealt with the rates used as a standard for comparison should be those for the occupied and retired, and the only question remaining is whether they should be applied to all ages (Table *c*, col. 3) or to ages 20-65 (col. 4).

In making this choice we may begin by considering the case of the clergy in cols. 1 and 2. Theirs is a special case, and simpler than others, because the census returns of numbers living, as well as the deaths, may be assumed to be correct. The reason why their ratio is so much higher in col. 1 than in col. 2 (79 and 60) has already been seen in connexion with Table *b*. The increase caused by including ages over 65 represents the effect of the tendency of mortality at these ages to approximate for classes and occupations (Table B), as it does for different localities (town and country—Annual Report, 1911, Diag. III, and Statistical Review, 1922, Text, Diag. I), and for different eras (the modern reduction of mortality decreasing as life advances). Lower ratios in cols. 2 and 4 than in cols. 1 and 3, (apart from the cases of high mortality occupations represented by the eight samples in the lower section of the table) are therefore due partly, and in the exceptional case of the clergy entirely, to this cause. But in the ordinary case another factor contributes to the difference. Understatement of occupational population at ages over 65 (Table *a*) causes understatement of "expected" deaths, and so overstatement of the ratios in col. 1. In col. 3 this understatement of population is compensated for in proportion as it approaches the average by overstatement of mortality for occupied and retired civilians to a corresponding extent. So if we imagine a typical occupation, with exactly average understatement of senile population, the use of the rates for the occupied and retired exactly compensates for this understatement, and the difference between the ratios in cols. 3 and 4 is due to the same cause as that between the ratios for the clergy in cols. 1 and 2—relatively high mortality in old age. The line for occupied and retired civilians in Table *c* may be taken as representing such a typical occupation, and as in its case mortality in old age is neither relatively high nor low, there is no difference between the ratios in cols. 3 and 4. It will be noticed that for Classes I-III, those of lowest mortality, and in which the approximation to average of senile mortality

therefore makes it relatively high, the ratios in col. 3 exceed those in col. 4, whereas for Classes IV and V, in which for the same reason senile mortality is relatively low, the ratios in col. 4 exceed those in col. 3—substantially in the case of Class V.

With these causes of difference between cols. 3 and 4 in mind, we may now proceed to the choice between them. In the first place, understatement of population at the higher ages can only be correctly compensated for by use of the overstated occupational mortality (for all occupied and retired) in the typical case where such understatement is of exactly average extent, and such instances will be few, if they occur at all. This in itself forms an argument for ignoring the imperfect data for ages over 65. But there is another and perhaps stronger argument depending on the point of view from which these occupational comparisons are approached. We may wish to compare the total lifetime of men who are or have been clergymen, costermongers, &c., in which case all ages must be taken into account, however defective the data in old age. But apart from the impossibility, in present circumstances, of making this comparison correctly, the question arises whether it is the comparison which it is most desirable to make. The standpoint of these reports has always been that it is desirable to bring out as clearly as possible the influence of occupation upon mortality at those ages at which it can be expected to be of importance, or, in Farr's words, "at which the influence of profession is most felt." To do so it is evidently better to eliminate ages over 65, at which occupational mortality is not only incorrectly returned, but tends towards equality for all occupations, whatever their effects upon health.

For both these reasons, then, preference must be given to the ratios in col. 4 over those in col. 3. A third reason, indeed, pointing in the same direction, has been referred to. To take account of the higher ages would constitute a new departure in the history of these reports introducing further elements of incomparability with earlier members of the series. This should be done only if on the merits the case for it is strong, as was the case for the new departure in 1921 in occupational classification. But if it be agreed that on the merits the case for a change of method, introducing the higher ages, is weak, considerations of continuity form a strong additional reason for continuing their exclusion. A slight change has, indeed, been made by including age 20–25, but the effect of this is so small as compared with that of the change in classification as to be inappreciable when made in conjunction with the latter, and many occupational risks must take effect at this as well as at later ages. Whether the change is desirable or not, its total effect is small, as can be seen from the number of deaths shown for this age in Table *a*.

The ratios in col. 4, Table *c*, are given on pages 2–116 for each occupation group dealt with, and are compared with the comparative mortality figure calculated as above described by use of the same ages and mortalities. The correspondence is as a rule very close, showing that the method of standardization is of little moment so long as the ages and mortalities taken into account are similar. The C.M.F., used in these reports from that for 1880–82 onwards, summarises the age mortalities of the various occupations without varying the weights attaching to them, whereas the method represented by col. 4 varies these weights in accordance with the age distribution of the population dealt with. The choice between these procedures is largely a matter of personal taste, and is as a rule of little consequence. One practical advantage, however, of the ratios in col. 4 may be referred to. These are derived from mortality rates based on very large populations, whereas the C.M.F. is derived from occupational age mortality rates, based in some cases on very small populations. Barristers have been included in Table *c* as exemplifying the possible effects of this to an exceptional extent. The excess of their C.M.F., 1,171, over their col. 4 ratio of 107 per cent. is entirely due to a very high rate of mortality at age 20–25, based on a single death. Had this one death not occurred their C.M.F. would have been 1,023 instead of 1,171. This, however, is an extreme case, and generally speaking, the results of using the two methods are very much the same.

And it may be argued that the same possibility of chance variation is introduced into the ratio of "actual" to "expected" deaths by the smallness of the population in which the actual deaths occur as is introduced into the standardized mortality by the smallness of the same population, from which are derived the age rates on which it (the C.M.F.) is based. But this argument only partially meets the case against the C.M.F. For the C.M.F. assigns average weight to an abnormal mortality rendered possible only by the subnormal proportion of barristers living at the age in question, 20–25. So even if one's point of view prefers fixed weights in the summation of age mortalities it must be admitted that the method of varying weights possesses a practical advantage where small populations are concerned; and the same consideration must apply to the comparatively small mortalities from separate causes.

The latter eight occupations in Table *c* illustrate the cases where, generally as the result of relatively high mortality at ages under 65, the ratio of "actual" to "expected" deaths is lower if based on all ages than if senile mortality is excluded. These cases are typified by that of the barman, already considered in connexion with Table *b*. It will be seen that they are all of high, as the other nine are of low, mortality.

TABLE d.

Deaths of Non-Civilians, and of Men retired, without record of civil occupation, from the Navy, Army, and Air Force, 1921-23.

OFFICERS AND MEN OF THE NAVY, ARMY AND AIR FORCE (810-5).										CAUSE OF DEATH.		RETIRED, WITHOUT RECORD OF CIVIL OCCUPATION, FROM NAVY, ARMY, AND AIR FORCE (998, 999).									
Numbers of Deaths at Ages—										For the precise significance of each title and its relation to the International List of Causes of Death, see page 1.		Numbers of Deaths at Ages—									
All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.				All Ages 16 and upwards.	16—	20—	25—	35—	45—	55—	65—	70 and upwards.	
45	15	7	12	7	8	—	1	—	Influenza	..	..	136	—	2	9	19	18	17	17	54	
265	17	66	87	81	13	—	—	—	Respiratory tuberculosis	..	..	1,864	20	397	697	507	228	63	11	16	
53	13	18	13	7	22	—	—	—	Other tuberculosis	..	..	44	2	37	44	21	7	6	3	1	
127	5	3	26	75	2	—	—	—	Syphilis, etc.	..	..	399	—	—	31	128	141	61	16	22	
10	—	2	5	3	—	—	—	—	Syphilis	..	..	30	—	—	4	7	14	2	2	1	
—	—	—	—	—	—	—	—	—	Tabes dorsalis	..	..	64	—	—	2	10	18	15	8	11	
105	—	1	20	65	19	—	—	—	General paralysis of insane	..	..	193	—	—	24	90	62	17	—	—	
12	1	—	7	7	8	—	—	—	Aneurysm	..	..	112	—	—	21	20	47	27	6	10	
88	3	7	14	40	17	—	—	—	Cancer, all sites	..	..	916	1	7	14	68	137	231	127	331	
1	—	—	—	—	—	—	—	—	Skin	..	..	48	—	—	2	—	3	10	1	27	
—	—	—	—	—	—	—	—	—	Lip	..	..	17	—	—	—	2	2	2	2	9	
1	—	—	—	—	—	—	—	—	Tongue	..	..	69	—	—	—	3	6	24	11	23	
5	—	—	—	—	—	—	—	—	Esophagus	..	..	68	—	—	—	3	11	18	11	25	
21	—	—	—	—	—	—	—	—	Stomach	..	..	154	—	—	—	17	35	36	22	43	
56	3	7	13	20	9	—	—	—	Other sites	..	..	585	1	7	9	43	80	141	80	204	
—	—	—	—	—	—	—	—	—	Chronic rheumatism, etc., Gout	..	..	33	—	—	2	3	4	6	3	15	
8	2	1	5	—	—	—	—	—	Diabetes	..	..	99	—	5	25	13	12	14	5	25	
26	7	—	1	6	—	—	—	—	Alcoholism	..	..	4	—	—	—	1	1	1	—	1	
65	8	12	25	18	5	—	—	—	Cerebral hemorrhage, etc.	..	..	479	—	—	7	19	51	78	54	270	
—	—	—	—	—	—	—	—	—	Other diseases of the nervous system	..	..	300	—	16	51	54	58	46	23	52	
27	1	2	10	8	5	—	1	—	Valvular disease of heart	..	..	566	—	12	62	81	92	92	46	181	
49	3	7	12	18	2	—	1	—	Other heart disease	..	..	728	—	11	52	57	73	102	85	343	
9	—	—	1	6	2	—	—	—	Arterio-sclerosis	..	..	353	—	—	12	12	23	35	43	239	
2	1	—	—	1	—	—	—	—	Other diseases of circulatory system	..	..	17	—	—	1	3	3	4	3	4	
11	1	2	2	2	—	—	—	2	Bronchitis	..	..	491	—	2	13	38	38	40	49	311	
161	35	28	53	39	3	—	—	3	Pneumonia	..	..	336	—	7	29	62	51	44	26	117	
—	—	—	—	—	—	—	—	—	Chronic interstitial pneumonia	..	..	9	—	1	—	3	2	2	1	—	
21	2	6	5	6	2	—	—	—	Other diseases of respiratory system	..	..	108	—	6	14	16	12	13	7	40	
24	—	2	8	7	3	—	—	—	Ulcer of stomach	..	..	52	—	3	3	21	14	5	6	3	
17	1	5	4	8	1	—	—	—	Ulcer of duodenum	..	..	23	—	—	3	5	6	4	—	5	
39	7	17	7	6	2	—	—	—	Appendicitis	..	..	28	—	4	4	6	3	6	1	5	
3	—	1	1	1	—	—	—	—	Hernia	..	..	22	—	—	—	2	2	2	1	14	
22	2	8	7	2	3	—	—	—	Intestinal obstruction	..	..	40	—	—	8	9	3	4	3	13	
4	—	—	—	3	1	—	—	—	Cirrhosis of liver	..	..	50	—	—	1	2	12	24	4	7	
35	2	10	15	7	1	—	—	—	Other diseases of digestive system	..	..	138	—	3	15	13	11	22	14	60	
6	—	3	2	1	—	—	—	—	Acute nephritis	..	..	17	—	—	1	1	2	5	2	6	
24	1	2	5	9	6	—	—	—	Chronic nephritis	..	..	309	2	13	27	41	51	50	34	91	
2	—	—	—	—	—	—	—	—	Diseases of the prostate	..	..	112	—	—	—	—	—	5	13	94	
18	1	—	5	1	5	—	—	—	Other genito-urinary diseases	..	..	127	—	3	11	16	15	18	8	56	
1	—	—	—	—	—	—	—	—	Old age	..	..	523	—	—	—	—	—	3	13	507	
81	14	18	21	26	2	—	—	—	Suicide	..	..	120	—	6	21	26	26	18	10	13	
301	38	107	113	39	3	—	—	—	Accident	..	..	117	—	5	10	18	21	19	13	31	
160	36	49	53	23	5	—	—	—	Other causes	..	..	334	1	28	74	65	58	31	16	61	
1,710	204	389	515	456	120	16	4	6	All causes	..	..	8,971	26	495	1,230	1,329	1,170	1,071	657	2,993	
605,763	129,498	192,276	173,841	89,280	18,120	2,241	231	276	Years of Life (Census Population × 3)	..	..	174,351	2,667	28,923	38,385	33,513	23,953	21,693	9,309	18,603	
—	188	202	296	511	662	714	1,732	2,174	Mean Annual Death-rates per 100,000	..	..	—	975	1,838	3,204	3,066	5,082	4,937	7,058	16,080	
—	64	57	74	80	57	23	35	16	Ratio of Mortality to that of all Occupied and Retired Civilian Males taken as 100	..	..	—	395	522	803	621	435	192	141	118	

APPENDIX B.

Seamen, Merchant Service (census occupation numbers 733-7) have not been included amongst the occupational groups dealt with in the body of the report, because mortality rates calculated, as for other occupations, on census population and registered deaths are necessarily very incomplete, and so liable to be misleading.

In 1921 rather less than two-thirds (an exceptionally high proportion) of the total of British seamen between 20 and 65 years of age, were included in the British census (page 128), the remainder being at sea or abroad, and similarly the deaths registered in this country necessarily exclude those occurring at sea or in foreign ports. It has, nevertheless, been customary in the past to collate these two sets of incomplete and independently varying figures and present the resultant mortalities in the same form as for other occupations. But as it was found that, notwithstanding warnings of the dubious value of the rates so derived, they were freely quoted and used as if of equal validity with other occupational returns, it seemed necessary on the present occasion either to abandon inclusion of this occupation altogether or to attempt by some means to obtain a more complete and trustworthy statement of its mortality. These alternatives were considered by a sub-committee of the Permanent Consultative Committee on Official Statistics, which had been consulted by the Board of Trade as to the statistical treatment of mortality in the mercantile marine. In a report, published in 1926,* this sub-committee recommended that the mortality of merchant seamen should again be dealt with in the present report, but on lines calculated to yield more trustworthy results than those previously followed.

The scheme is described in the report referred to, and its application may be followed in the tabular statement on page 128. Briefly, it aims at obtaining comprehensive figures for British seamen both as regards population and deaths. This can be done only by combining the census and registration data with the corresponding records of the Registrar-General of Shipping and Seamen. As these necessarily relate to the United Kingdom as a whole, the combined statistics perforce have the same reference.

The total population of seamen, ashore or afloat and at home or abroad, has been obtained by addition to the total recorded in the British census (which, of course, comprises only those, on shipboard or ashore, who passed the census night in this country or reached a British port the following day) of a count which had fortunately been taken of the number of seamen (excluding fishermen) of various ages employed on sea-going vessels, registered under Part I of the Merchant Shipping Act, 1894, and belonging to the British Islands, who were not included in the British census, being absent on 19th June, 1921. Unfortunately, no Irish census had been taken in 1921, so the numbers of seamen ashore in Ireland on census date are unknown. This difficulty has been met, on the population side, by adding to the total absent on census date the total enumerated in the British Islands, Ireland excepted, so that the seamen of Great Britain are included whether ashore or afloat, but those of Ireland only if afloat; and as regards deaths, by corresponding treatment of the records, including all deaths of seamen at sea or abroad as reported by the Registrar-General of Shipping and Seamen, and all registered in the British Isles elsewhere than in Ireland. In this way complete returns have been obtained for other parts of the British Isles, while for Ireland population and deaths alike refer only to men "on articles" at the time of census or of death. Ships passing the census night in Irish ports had been counted as abroad, so their crews are included in the return furnished by the Registrar-General of Shipping and Seamen, and care was taken to exclude from the corresponding return of deaths on board ship or abroad all liable to registration in this country, so it is believed that the totals as defined above are complete and free from overlapping. A further account of the procedure followed will be found in the report cited, by which it has been governed, and the details of its application may be followed in the tabular statement on page 128.

But while the difficulties peculiar to the merchant seaman have been surmounted, it is hoped successfully, in the manner described, it does not follow that the results obtained are necessarily a correct measure of his mortality. The possibility of error due to want of correspondence between census and registration data (page vi) is of special importance in the case of seamen because change of occupation is specially frequent in their case. If the numbers of seamen on page 128 are compared with those of the total occupied and retired on page 2 it is seen that those for seamen are proportionately in large excess at 20-35, and in corresponding and increasing defect at 35-65. This no doubt means that large numbers of seamen leave the sea while still of working age and take up some shore occupation. This fact of itself should not necessarily affect the mortality returns. But if disease incurred at sea were a frequent cause of the change of occupation the seaman's mortality would be understated in that the deaths of such men, occurring after the change of occupation, would be debited to the land occupation while belonging by causal origin to the sea. There is no evidence in favour of this hypothesis, though it has to be considered as a possibility in the case of an occupation so frequently changed. But there is ample explanation, in the desire of the natural man for more settled conditions of life as age advances and the lure of adventure and discovery diminishes, for the abandonment of the sea in middle age apart altogether from considerations of health. On the other hand there is a picturesque and dramatic appeal in the calling of the mariner which may lead to its record in death certification in some cases even after a shore occupation has taken its place. If this does in fact occur it must lead to overstatement of the mortality of seamen. But this possibility involves a question as to the psychology of death registrars and their informants on which the returns afford no guidance. It can only be said here that the special frequency of change of the seaman's occupation affords special opportunity for discrepancy between census and registration data, but that there are ample reasons for the frequency of change apart from considerations of health which would prejudice the mortality records.

The procedure becomes a little involved in dealing with the deaths of Lascars. The object in view, in accordance with the recommendation of the committee, is exclusion of Lascars from the records both of population and deaths. The numbers enumerated in the British census are negligible, and Lascars have been excluded from the return of seamen abroad or at sea on census date, so they may be regarded as excluded from the population dealt with. Similarly, their deaths have been excluded from the return of those occurring

* "Statistics relating to Health and Mortality in the Mercantile Marine."

abroad or at sea. But when this has been done 172 deaths of Lascars, 19 from violence and 153 from disease, remain included in the numbers registered in this country, as inferred from the fact that they occurred on vessels in rivers or harbours of the United Kingdom (information supplied by the Board of Trade). These deaths are, therefore, deducted as the final step in arriving at the numbers taken into account, so far as total deaths and deaths from violence are concerned. But as the numbers of registered Lascar deaths from respiratory tuberculosis and cancer are unknown, it has been impossible to apply the correction to the figures for these diseases. This, however, is of the less importance as the deaths recorded from all causes other than violence are merely the numbers registered in Great Britain.

The reason for quoting the numbers of deaths in the British registers ascribed to respiratory tuberculosis and cancer, but not to other diseases, is that it may be assumed that men approaching death from chronic and disabling diseases, such as these, seldom go to sea, but if British, die in this country, so that the deaths registered should not fall far short of the complete facts. This surmise is supported by the fact that according to the Board of Trade Returns of Shipping Casualties to and Deaths on British vessels for 1921-23, 1,284 deaths of men (of all ages), other than Lascars, from disease (of which 172 were registrable in this country) included only 90 from phthisis and 14 from cancer, these numbers forming 7 per cent. of the registered figures for phthisis on page 128, and 3 per cent. of those for cancer. Accepting, then, the mortality registered from these causes as reasonably complete, we may compare the seamen's C.M.F.s from all causes, phthisis, cancer, and violence, with those for land occupations. They are as follows:—All causes, 1,768; phthisis, 221·5; cancer, 146·7; and violence, 389·7, corresponding ratios being 1,768, 1,355, 1,143, and 5,295. The rate for all causes is higher than that of 171 out of the 178 occupations in Table F, that from phthisis than 131, that from cancer than 117, but that for violence is quite beyond the range of land experience. The highest combined suicide and accident C.M.F. in Table C is that for conveyors of material to the coal shaft, 236·3, or about 39 per cent. less than that for seamen.

Of the four C.M.F.s quoted those for all causes and for violence are complete, but that for phthisis is subject to increase by less than 7 and that for cancer by less than 3 per cent. to allow for deaths at sea and abroad. The totals quoted above for these deaths, 90 and 14 respectively, would increase the rates to the extent stated, but of these totals some did not occur at ages 20-65, and others, occurring on vessels in British waters, are included amongst the registered deaths. In addition, some few deaths of Lascars from these causes (see above) have also to be allowed for.

The available data permit the seamen's C.M.F. from all forms of disease to be stated at 1,378, comparing with 926 for all occupied and retired males, so that the seaman's mortality from disease exceeds the average by 48·8 per cent. (but see page 126), and his mortality from violence by 430 per cent. On the one hand, mortality is swollen by many exotic diseases, representing a risk to which the home population is not exposed, and on the other hand the traditional dangers of the sea, though greatly mitigated, evidently retain considerable importance. Whereas the coal miner or railway shunter is exposed to special risk of fatal accident for a limited number of hours only, for, generally, six or less days a week, the seaman on voyage is at special risk for 24 hours daily seven days a week. He is exposed, in fact, not only to the special risks associated with the discharge of his hazardous duties—explosion, fall, loss overboard, etc.—which may be compared with the risk of the miner or the shunter, but in addition to the special risk involved by residence on shipboard, to which the conditions of dangerous occupations on land afford no parallel.

MORTALITY OF SEAMEN (CODE NOS 733-7) AGED 20-65 YEARS—1921 23.

	Total aged 20-65 years.	Ages.				
		20-	25-	35-	45-	55 and under 65.
POPULATION :—						
Enumerated in—						
England and Wales (including retired)	110,783	20,448	36,205	25,963	17,904	10,263
Scotland*	17,779	3,183	5,571	4,241	3,095	1,689
Isle of Man and Channel Islands	1,104	157	340	263	194	150
Retired (Scotland and Islands)†	475	14	44	66	102	249
Total enumerated at 1921 Census	130,141	23,802	42,160	30,533	21,295	12,351
At Sea or Abroad on Census Day (excluding Lascars) ; figures furnished by the Registrar-General of Shipping and Seamen....						
Total Seamen (excluding Lascars)	77,202	17,716	29,756	17,962	9,211	2,557
Deduct Foreign Seamen enumerated in Foreign Vessels in British Ports‡	207,343	41,518	71,916	48,495	30,506	14,908
8,037	1,844	3,098	1,870	959	266	
Nett Total of Seamen	199,306	39,674	68,818	46,625	29,547	14,642
DEATHS—						
Registered in—						
England and Wales	4,905	455	1,037	1,009	1,112	1,292
Scotland*	794	67	182	155	175	215
Isle of Man and Channel Islands	67	2	8	13	15	29
At Sea and Abroad (excluding Lascars) ; furnished by the Registrar-General of Shipping and Seamen	2,322	346	689	570	481	236
Deaths from :—						
Respiratory Tuberculosis|| .....	1,247	201	498	325	158	65
Cancer|| .....	509	6	25	57	168	253
Violence (Accident, Suicide, Homicide)	2,022	334	631	477	370	210
Other Causes	4,310	329	762	888	1,087	1,244
All Causes	8,088	870	1,916	1,747	1,783	1,772
Deduct deaths of Lascars (registered) in rivers or harbours of Great Britain (furnished by the Registrar-General of Shipping and Seamen) from—						
Violence (Accident, Suicide, Homicide)	17	6	9	1	1	—
Other Causes	147	36	60	30	13	8
NETT DEATHS FROM—						
Respiratory Tuberculosis|| .....	1,247	201	498	325	158	65
Cancer|| .....	509	6	25	57	168	253
Violence (Accident, Suicide, Homicide)	2,005	328	622	476	369	210
Other Causes	4,163	293	702	858	1,074	1,236
All Causes	7,924	828	1,847	1,716	1,769	1,764
YEARS OF LIFE (nett Total of Seamen × 3)	597,918	119,022	206,454	139,875	88,641	43,926
DEATH-RATE PER 100,000—						
Respiratory Tuberculosis|| .....	—	169	241	232	178	148
Cancer|| .....	—	5	12	41	190	576
Violence (Accident, Suicide, Homicide)	—	276	301	340	416	478
Other Causes	—	246	340	613	1,212	2,814
All Causes	—	696	895	1,227	1,996	4,016
Ratio of Mortality to that of All Occupied and Retired Civilian Males taken as 100						
—	—	198	224	192	173	156

Standardized Mortality (C.M.F.) at ages 20-65 from :—

All Causes, 1,768; Respiratory Tuberculosis, 221·5; Cancer, 146·7; Violence, 389·7.

Ratio of Standardized Mortality to that of All Occupied and Retired Civilian Males taken as 1,000 in each case :—

All Causes, 1,768; Respiratory Tuberculosis, 1,355; Cancer, 1,143; Violence, 5,295.

* Includes the figures for Bargemen and Boatmen (code no. 738), but excludes those for Purser, Stewards, &c. (code no. 737). The deaths relate to the years 1920-22.

† The number of Retired Seamen for Scotland and the Islands in the British Seas was known but not their ages. They have been distributed in accordance with the age constitution of the retired seamen in England and Wales.

‡ The number of these men was furnished by the Registrar-General of Shipping and Seamen. Their ages were not known and they have been distributed in accordance with the age constitution of Seamen enumerated at Sea or Abroad.

|| Deaths registered in Great Britain and the Isle of Man and Channel Islands.

Deaths, and Mortality per Million living, from Cancer of various sites, of all Occupied and Retired Civilian Males and of the Five Social Classes—1921-23.

		Deaths.										Mortality per million.						
Social Class.		Total over 16.	16-	20-	25-	35-	45-	55-	65-	70 and over.	16-	20-	25-	35-	45-	55-	65-	70 and over.
All Sites	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Occ. & Ret. ...	61,634	126	233	853	2,905	10,369	19,811	10,641	16,696	34	58	113	399	1,656	4,937	8,429	13,297
	I ...	1,652	1	3	14	41	245	478	280	590	26	43	98	238	1,456	3,858	7,138	2,029
	II ...	14,479	18	39	163	549	2,129	4,295	2,543	4,743	41	65	115	353	1,504	4,577	8,706	13,752
	III ...	23,452	52	113	386	1,292	4,068	7,501	3,964	6,076	32	61	109	400	1,601	4,954	8,633	12,845
	IV ...	11,526	38	54	174	553	1,996	3,794	1,940	2,977	35	55	113	396	1,634	4,692	7,542	13,013
V ...	10,525	17	24	116	470	1,931	3,743	1,914	2,310	31	46	127	510	2,106	5,960	8,912	14,447	
Lip	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Occ. & Ret. ...	750	—	1	2	4	54	185	115	389	—	0	0	1	9	46	91	310
	I ...	5	—	—	—	—	—	2	—	3	—	—	—	—	—	16	—	61
	II ...	132	—	—	—	—	7	29	22	74	—	—	—	—	5	31	75	215
	III ...	181	—	—	—	2	16	41	33	89	—	—	—	1	6	27	72	188
	IV ...	244	—	1	1	1	16	62	25	138	—	1	1	1	13	77	97	603
V ...	188	—	—	1	1	15	51	35	85	—	—	1	1	16	81	163	532	
Tongue	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Occ. & Ret. ...	3,220	—	1	7	93	640	1,271	514	694	—	0	1	13	102	317	407	553
	I ...	54	—	—	—	1	12	14	10	17	—	—	—	6	71	113	255	347
	II ...	567	—	1	3	16	108	206	91	142	—	2	2	10	76	220	312	412
	III ...	1,184	—	—	1	37	229	475	191	251	—	—	0	11	90	314	416	531
	IV ...	604	—	—	3	17	128	255	88	113	—	—	2	12	105	315	342	494
V ...	811	—	—	—	22	163	321	134	171	—	—	—	24	178	511	624	1,069	
Mouth	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Occ. & Ret. ...	1,048	—	—	—	27	187	381	194	259	—	—	—	4	30	95	153	206
	I ...	21	—	—	—	—	2	8	4	7	—	—	—	—	12	65	102	142
	II ...	184	—	—	—	3	35	60	33	53	—	—	—	2	25	64	113	153
	III ...	379	—	—	—	15	72	138	70	84	—	—	—	5	28	91	152	178
	IV ...	210	—	—	—	4	34	80	35	57	—	—	—	3	28	99	136	250
V ...	254	—	—	—	5	44	95	52	58	—	—	—	5	48	151	243	363	
Jaw	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Occ. & Ret. ...	1,489	3	3	9	41	260	549	235	389	1	1	1	6	42	137	186	310
	I ...	17	—	—	—	—	2	5	3	7	—	—	—	—	12	40	76	143
	II ...	265	—	1	—	6	43	87	42	86	—	2	—	4	30	93	144	249
	III ...	555	1	1	5	21	88	209	85	145	1	1	1	7	35	138	185	307
	IV ...	295	1	—	1	8	60	114	39	72	1	—	1	6	49	141	152	315
V ...	357	1	1	3	6	67	134	66	79	2	2	3	7	73	213	307	494	

APPENDIX C—continued.

	Social Class.	Deaths.										Mortality per million.							
		Total over 16.	16—	20—	25—	35—	45—	55—	65—	70 and over.	16—	20—	25—	35—	45—	55—	65—	70 and over.	
Tonsil	Occ. & Ret. ...	665	3	5	8	23	130	270	114	112	1	1	1	3	21	67	90	89	
	I	8	—	—	—	1	2	—	3	2	—	—	—	6	12	—	76	41	
	II	129	1	—	1	6	27	48	23	23	2	—	1	4	19	51	79	67	
	III	252	1	5	6	4	43	101	43	52	1	3	2	1	16	67	110	94	
	IV	137	—	—	1	4	32	54	28	18	—	—	1	3	26	67	109	79	
	V	139	1	—	—	8	29	67	17	17	2	—	—	9	32	107	79	106	
Pharynx	Occ. & Ret. ...	768	3	3	4	24	165	295	121	153	1	1	1	3	26	74	96	122	
	I	17	—	—	1	—	5	6	4	1	—	—	7	—	30	48	102	20	
	II	145	1	1	—	2	34	48	22	37	2	2	—	1	24	51	75	107	
	III	285	1	—	2	13	61	108	44	56	1	—	1	4	24	71	96	118	
	IV	141	1	1	—	5	30	58	15	31	1	1	—	4	25	72	58	136	
	V	180	—	1	1	4	35	75	36	28	—	2	1	4	38	119	168	175	
Oesophagus	Occ. & Ret. ...	4,272	—	1	13	84	845	1,680	746	903	—	0	2	12	135	419	591	719	
	I	99	—	—	—	1	19	37	14	28	—	—	—	6	113	299	357	571	
	II	941	—	—	—	14	154	365	154	254	—	—	—	9	109	389	527	736	
	III	1,708	—	—	8	41	362	658	284	355	—	—	2	13	142	435	619	750	
	IV	708	—	—	3	10	155	278	140	122	—	—	2	7	127	344	544	533	
	V	816	—	1	2	18	155	342	154	144	—	2	2	20	169	545	717	901	
Stomach	Occ. & Ret. ...	13,590	5	10	163	787	2,472	4,443	2,367	3,343	1	2	22	108	395	1,107	1,875	2,662	
	I	265	—	—	6	7	38	82	53	79	—	—	42	41	226	662	1,351	1,611	
	II	3,021	—	1	19	131	452	881	584	953	—	2	13	84	319	939	1,999	2,763	
	III	5,157	2	4	73	357	988	1,670	839	1,224	2	2	21	111	389	1,103	1,827	2,588	
	IV	2,733	2	1	35	163	525	918	486	603	2	1	23	117	430	1,135	1,890	2,636	
	V	2,414	1	4	30	129	469	892	405	484	2	8	33	140	512	1,420	1,885	3,026	
Small Intestine	Occ. & Ret. ...	302	4	2	11	24	49	85	46	81	1	1	2	3	8	21	36	65	
	I	8	—	—	—	—	3	2	1	2	—	—	—	—	18	16	25	41	
	II	87	—	—	4	2	6	21	18	36	—	—	3	1	4	22	62	104	
	III	104	—	1	5	12	18	36	14	18	—	1	1	4	7	24	30	38	
	IV	58	4	1	1	4	13	12	9	14	4	1	1	3	11	15	35	61	
	V	45	—	—	1	6	9	14	4	11	—	—	1	7	10	22	19	69	

Cæcum	Occ. & Ret. ...	503	1	2	3	27	75	137	97	161	0	1	0	4	12	34	77	128
	I	26	—	—	—	—	6	2	4	14	—	—	—	—	36	16	102	285
	II	158	—	1	1	5	14	43	30	64	—	2	1	3	10	46	103	186
	III	195	—	1	2	12	34	56	36	54	—	1	1	4	13	37	78	114
	IV	72	—	—	—	3	11	22	16	20	—	—	—	2	9	27	62	87
Hepatic and Splenic Flexures	V	52	1	—	—	7	10	14	11	9	2	—	—	8	11	22	51	56
	Occ. & Ret. ...	200	—	1	4	6	36	54	33	66	—	0	1	1	6	14	26	53
	I	3	—	—	—	—	—	1	—	2	—	—	—	—	—	8	—	41
	II	66	—	—	1	—	10	19	10	26	—	—	1	—	7	20	34	75
	III	70	—	—	2	3	14	16	11	24	—	—	1	—	6	11	24	51
Sigmoid Flexure ...	IV	39	—	—	1	2	9	12	4	10	—	1	1	1	7	15	16	44
	V	22	—	—	—	1	3	6	8	4	—	—	—	1	3	10	37	25
	Occ. & Ret. ...	1,054	1	2	15	47	172	343	165	309	0	1	2	7	28	86	131	246
	I	54	—	—	1	3	7	14	8	21	—	—	7	17	42	113	204	428
	II	298	—	—	5	10	44	93	44	102	—	—	4	6	31	99	151	296
Colon, part not stated ...	III	402	1	2	5	20	69	130	69	106	1	1	1	6	27	86	150	224
	IV	167	—	—	3	9	25	57	28	45	—	—	2	6	21	71	109	197
	V	133	—	—	1	5	27	49	16	35	—	—	1	5	29	78	74	219
	Occ. & Ret. ...	3,108	1	5	39	150	416	909	569	1,014	0	1	5	21	66	227	451	808
	I	128	—	—	—	4	22	31	15	56	—	—	—	23	131	250	382	1,142
Intestine, part not stated	II	846	—	1	6	36	96	237	165	305	—	2	4	23	68	253	565	884
	III	1,169	1	2	14	64	174	338	208	368	1	1	4	20	69	223	453	778
	IV	541	—	2	13	18	62	173	97	176	—	2	8	13	51	214	377	769
	V	419	—	—	6	28	62	130	84	109	—	—	7	30	68	207	391	682
	Occ. & Ret. ...	2,004	1	8	16	85	254	551	389	700	0	2	2	12	41	137	308	557
Rectum and Anus ...	I	69	—	—	—	2	8	11	13	35	—	—	—	12	48	89	331	714
	II	548	—	3	4	17	66	126	125	207	—	5	3	11	47	134	428	600
	III	741	1	1	7	31	105	208	130	258	1	1	2	10	41	137	283	545
	IV	369	—	2	4	24	37	114	66	122	—	2	3	17	30	141	257	533
	V	277	—	2	1	11	38	92	55	78	—	4	1	12	41	146	256	488
Rectum and Anus ...	Occ. & Ret. ...	6,511	3	11	87	240	942	2,054	1,178	1,996	1	3	12	33	150	512	933	1,590
	I	181	—	—	—	2	27	62	24	66	—	—	—	12	161	500	612	1,346
	II	1,638	—	1	7	49	228	495	282	576	—	2	5	32	161	527	965	1,670
	III	2,579	1	5	57	112	387	772	474	771	1	3	16	35	152	510	1,032	1,630
	IV	1,235	2	4	13	50	169	403	227	367	2	4	8	36	138	498	882	1,604
Rectum and Anus ...	V	878	—	1	10	27	131	322	171	216	—	2	11	29	143	513	796	1,351

APPENDIX C—continued.

	Social Class.	Deaths.										Mortality per million.							
		Total over 16.	16-	20-	25-	35-	45-	55-	65-	70 and over.	16-	20-	25-	35-	45-	55-	65-	70 and over.	
Larynx	Occ. & Ret. ...	1,961	1	—	2	66	425	733	356	378	0	—	0	9	68	183	282	301	
	I ...	52	1	—	—	—	5	21	9	16	26	—	—	—	30	170	229	326	
	II ...	437	—	—	—	13	106	148	68	102	—	—	—	8	75	158	233	296	
	III ...	743	—	—	—	33	147	269	134	160	—	—	—	10	58	178	292	338	
	IV ...	343	—	—	1	13	80	138	63	48	—	—	1	9	66	171	245	210	
	V ...	386	—	—	1	7	87	157	82	52	—	—	1	8	95	250	382	325	
Skin	Occ. & Ret. ...	2,117	—	8	26	93	270	487	312	921	—	2	3	13	43	121	247	733	
	I ...	25	—	1	—	2	3	7	2	10	—	14	—	12	18	56	51	204	
	II ...	388	—	—	7	9	30	80	55	207	—	—	5	6	21	85	188	600	
	III ...	812	—	5	13	39	113	188	130	324	—	3	4	12	44	124	283	685	
	IV ...	477	—	2	4	20	58	114	60	219	—	2	3	14	47	141	233	957	
	V ...	415	—	—	2	23	66	98	65	161	—	—	2	25	72	156	303	1,007	
Breast	Occ. & Ret. ...	104	—	—	2	3	17	33	15	34	—	—	0	0	3	8	12	27	
	I ...	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	20	
	II ...	30	—	—	1	—	4	10	5	10	—	—	1	—	3	11	17	29	
	III ...	32	—	—	1	1	6	8	3	13	—	—	0	0	2	5	7	27	
	IV ...	17	—	—	—	1	3	5	2	6	—	—	—	1	3	6	8	26	
	V ...	24	—	—	—	1	4	10	5	4	—	—	—	1	4	16	23	25	
Peritoneum, Mesentery	Occ. & Ret. ...	337	—	8	20	49	67	95	49	49	—	2	3	7	11	24	39	39	
	I ...	16	—	—	2	2	1	4	2	5	—	—	14	12	6	32	51	102	
	II ...	84	—	1	4	6	13	21	19	20	—	2	3	4	9	22	65	58	
	III ...	126	—	4	6	22	33	39	14	8	—	2	2	7	13	26	30	17	
	IV ...	59	—	2	5	11	12	16	4	9	—	2	3	8	10	20	16	39	
	V ...	52	—	1	3	8	8	15	10	7	—	2	3	9	9	24	47	44	
Pancreas	Occ. & Ret. ...	1,445	—	3	28	89	283	497	237	308	—	1	4	12	45	124	188	245	
	I ...	47	—	—	—	—	4	24	8	11	—	—	—	—	24	194	204	224	
	II ...	391	—	1	3	16	66	129	72	104	—	2	2	10	47	137	246	302	
	III ...	540	—	1	14	45	110	180	89	101	—	1	4	14	43	119	194	214	
	IV ...	233	—	1	5	17	50	84	32	44	—	1	3	12	41	104	124	192	
	V ...	234	—	—	6	11	53	80	36	48	—	—	7	12	127	168	300		

Kidney and Supra-renal	...	...	Occ. & Ret. ...	560	1	5	15	59	137	197	65	81	0	1	2	8	22	49	51	65
	I	...	...	16	—	—	—	1	—	8	3	4	—	—	—	6	—	65	76	82
	II	...	...	145	—	—	4	5	34	59	21	22	—	—	3	3	24	63	72	64
	III	...	...	221	—	5	5	29	57	73	20	32	—	3	1	9	22	48	44	68
	IV	...	...	104	—	—	4	12	26	36	12	13	1	—	3	9	21	45	47	57
	V	...	...	74	—	—	2	12	20	21	9	10	—	—	2	13	22	33	42	63
Bladder	...	...	Occ. & Ret. ...	1,832	1	2	5	60	216	545	396	607	0	1	1	8	35	136	314	483
	I	...	...	68	—	—	—	—	7	19	15	27	—	—	—	—	42	153	382	550
	II	...	...	470	1	—	2	10	50	124	109	174	2	—	1	6	35	132	373	504
	III	...	...	717	—	2	3	27	78	221	154	232	—	1	1	8	31	146	335	490
	IV	...	...	279	—	—	—	12	32	85	51	99	—	—	—	9	26	105	198	433
	V	...	...	298	—	—	—	11	49	96	67	75	—	—	—	12	54	153	312	469
Prostate	...	...	Occ. & Ret. ...	2,454	—	1	3	15	145	596	552	1,142	—	0	0	2	23	149	437	909
	I	...	...	119	—	—	—	1	4	20	31	63	—	—	—	6	24	161	790	1,284
	II	...	...	734	—	—	1	1	30	168	148	386	—	—	1	1	21	179	507	1,119
	III	...	...	943	—	—	2	3	67	238	214	419	—	—	1	1	26	157	466	886
	IV	...	...	365	—	1	—	7	24	91	79	163	—	1	—	5	20	113	307	712
	V	...	...	293	—	—	—	3	20	79	80	111	—	—	—	3	22	126	372	694
Testes	...	...	Occ. & Ret. ...	308	10	18	72	67	40	45	21	35	3	5	10	9	6	11	17	28
	I	...	...	9	—	1	—	2	1	1	1	3	—	14	—	12	6	8	25	61
	II	...	...	93	2	5	25	26	12	11	3	9	5	8	18	17	9	12	10	26
	III	...	...	109	2	8	36	21	11	12	6	13	1	4	10	7	4	8	13	27
	IV	...	...	63	4	1	8	13	11	11	7	8	4	1	5	9	9	14	27	35
	V	...	...	34	2	3	3	5	5	10	4	2	4	6	3	5	6	16	19	13
Brain	...	...	Occ. & Ret. ...	161	6	5	25	47	46	21	9	2	2	1	3	7	7	5	7	2
	I	...	...	5	—	—	1	2	2	—	—	—	—	—	7	12	12	—	—	—
	II	...	...	52	1	1	10	14	13	8	3	2	2	2	7	9	9	9	10	6
	III	...	...	69	4	3	10	21	18	10	3	—	2	2	3	7	7	7	7	—
	IV	...	...	21	—	1	4	6	8	1	1	—	—	1	3	4	7	1	4	—
	V	...	...	14	1	—	—	4	5	2	2	—	2	—	—	4	6	3	9	—
Bones	...	...	Occ. & Ret. ...	876	40	66	61	85	162	222	102	138	11	16	8	12	26	55	81	110
	I	...	...	19	—	1	1	1	2	6	1	7	—	14	7	6	12	48	25	143
	II	...	...	228	6	10	13	20	43	58	25	53	14	17	9	13	30	62	86	154
	III	...	...	354	17	36	24	37	64	92	41	43	11	20	7	12	25	61	89	91
	IV	...	...	168	12	14	15	20	23	42	24	18	11	14	10	14	19	52	93	79
	V	...	...	107	5	5	8	7	30	24	11	17	9	10	9	8	33	38	51	106

APPENDIX C—continued.

	Social Class.	Deaths.										Mortality per million.							
		Total over 16.	16-	20-	25-	35-	45-	55-	65-	70 and over.	16-	20-	25-	35-	45-	55-	65-	70 and over.	
Gall Bladder	Occ. & Ret. ...	510	—	—	2	15	71	148	91	183	—	—	0	2	11	37	72	146	
	I ...	23	—	—	—	—	4	3	4	12	—	—	—	—	24	24	102	245	
	II ...	119	—	—	—	3	10	35	19	52	—	—	—	2	7	37	65	151	
	III ...	208	—	—	1	9	35	59	42	62	—	—	0	3	14	39	91	131	
	IV ...	98	—	—	—	3	15	24	13	43	—	—	—	2	12	30	51	188	
	V ...	62	—	—	1	—	7	27	13	14	—	—	1	—	8	43	61	88	
Lung	Occ. & Ret. ...	1,153	10	12	41	145	335	340	139	131	3	3	5	20	54	85	110	104	
	I ...	41	—	—	—	1	11	13	9	7	—	—	—	6	65	105	229	143	
	II ...	293	3	3	9	40	69	91	31	47	7	5	6	26	49	97	106	136	
	III ...	443	4	5	16	57	129	138	50	44	2	3	5	18	51	91	109	93	
	IV ...	183	3	3	11	22	59	39	28	18	3	3	7	16	48	48	109	79	
	V ...	193	—	1	5	25	67	59	21	15	—	2	6	27	73	94	98	94	
Liver	Occ. & Ret. ...	4,638	3	4	56	175	658	1,446	904	1,392	1	1	7	24	105	360	716	1,109	
	I ...	121	—	—	—	1	12	36	24	48	—	—	—	6	71	291	612	979	
	II ...	1,166	—	1	6	32	150	352	210	415	—	2	4	21	106	375	719	1,203	
	III ...	1,763	1	1	22	74	255	552	360	498	1	1	6	23	100	365	784	1,053	
	IV ...	882	—	2	17	34	132	285	163	249	—	2	11	24	108	352	634	1,088	
	V ...	706	2	—	11	34	109	221	147	182	4	—	12	37	119	352	684	1,138	
Abdomen	Occ. & Ret. ...	320	1	3	6	11	37	95	43	124	0	1	1	2	6	24	34	99	
	I ...	19	—	—	—	1	1	3	5	9	—	—	—	6	6	24	127	183	
	II ...	91	—	—	2	1	7	19	16	46	—	—	1	1	5	20	55	133	
	III ...	115	—	1	3	4	13	38	10	46	—	1	1	1	5	25	22	97	
	IV ...	58	1	2	1	3	8	20	8	15	1	2	1	2	7	25	31	66	
	V ...	37	—	—	—	2	8	15	4	8	—	—	—	2	9	24	19	50	
Neck	Occ. & Ret. ...	136	—	—	—	3	30	54	19	30	—	—	—	0	5	14	15	24	
	I ...	4	—	—	—	—	4	—	—	—	—	—	—	—	24	—	—	—	
	II ...	20	—	—	—	—	5	4	3	8	—	—	—	—	4	4	10	23	
	III ...	53	—	—	—	—	9	23	8	13	—	—	—	—	4	15	17	27	
	IV ...	29	—	—	—	2	4	14	3	6	—	—	—	1	3	17	12	26	
	V ...	30	—	—	—	1	8	13	5	3	—	—	—	1	9	21	23	19	

Lymphatic Glands	...	Occ. & Ret.	...	1,580	15	20	59	109	379	526	203	269	4	5	8	15	61	131	161	214
	I	...	...	38	—	—	—	3	13	11	2	9	—	—	—	17	77	89	51	183
	II	...	...	298	3	3	13	18	75	94	32	60	7	5	9	12	53	100	110	174
	III	...	...	639	6	10	25	56	151	209	71	111	4	5	7	17	59	138	155	235
	IV	...	...	277	4	6	10	18	67	88	37	47	4	6	7	13	55	109	144	205
	V	...	...	328	2	1	11	14	73	124	61	42	4	2	12	15	80	197	284	263
Mediastinum	...	Occ. & Ret.	...	708	4	8	27	62	169	231	105	102	1	2	4	9	27	58	83	81
	I	...	...	43	—	—	2	—	10	15	6	10	—	—	14	—	59	121	153	204
	II	...	...	195	—	3	6	16	44	53	34	39	—	5	4	10	31	57	116	113
	III	...	...	249	3	1	8	31	51	87	34	34	2	1	2	10	20	58	74	72
	IV	...	...	135	1	3	5	8	40	44	18	16	1	3	3	6	33	54	70	70
	V	...	...	86	—	1	6	7	24	32	13	3	—	2	7	8	26	51	61	19
Other specified sites	...	Occ. & Ret.	...	856	8	13	18	76	163	263	125	190	3	3	2	10	26	66	99	151
	I	...	...	29	—	—	—	3	7	9	2	8	—	—	—	17	42	73	51	163
	II	...	...	198	—	1	5	18	43	64	23	44	—	2	4	12	30	68	79	128
	III	...	...	311	5	7	8	33	51	98	44	65	3	4	2	10	20	65	96	138
	IV	...	...	170	2	3	5	9	33	41	29	48	2	3	3	6	27	51	113	210
	V	...	...	148	1	2	—	13	29	51	27	25	2	4	—	14	32	81	126	157
Multiple	...	Occ. & Ret.	...	61	1	2	4	12	15	15	7	5	0	1	1	2	2	4	6	4
	I	...	...	2	—	—	—	—	1	1	—	—	—	—	—	—	6	8	—	—
	II	...	...	13	—	—	1	3	1	5	1	2	—	—	1	2	1	5	3	6
	III	...	...	28	1	2	2	6	8	4	3	2	1	1	1	2	3	3	7	4
	IV	...	...	8	—	—	—	—	3	3	2	—	—	—	—	—	3	4	8	—
	V	...	...	10	—	—	1	3	2	2	1	1	—	—	1	3	2	3	5	6
Site not stated	...	Occ. & Ret.	...	38	—	—	—	2	7	15	8	6	—	—	—	0	1	4	6	5
	I	...	...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	II	...	...	9	—	—	—	1	—	4	1	3	—	—	—	1	—	4	3	9
	III	...	...	16	—	—	—	—	5	7	3	1	—	—	—	—	2	5	7	2
	IV	...	...	4	—	—	—	—	2	1	1	—	—	—	—	—	2	1	4	—
	V	...	...	9	—	—	—	1	—	3	3	2	—	—	—	1	—	5	14	13

APPENDIX D.

STANDARDIZED MORTALITY (C.M.F.) of Males, aged 20-65 years, from Cancer of the Tongue, Esophagus, and Stomach, and ratio to that of all Occupied and Retired Civilian Males taken as 1,000—1921-23.

Group No.	Occupation.	C.M.F.			Ratio.		
		Tongue.	Esophagus.	Stomach.	Tongue.	Esophagus.	Stomach.
	All Occupied and Retired Civilian Males	7.5	9.7	29.5	1,000	1,000	1,000
	Social Class I.—Upper and Middle	3.6	7.4	17.6	480	763	597
	Social Class II.—Intermediate	5.5	8.8	24.2	733	907	820
	Social Class III.—Skilled Workers	7.1	10.1	29.4	947	1,041	997
	Social Class IV.—Intermediate	7.5	8.5	31.2	1,000	876	1,058
	Social Class V.—Unskilled Workers...	12.4	12.6	38.2	1,653	1,299	1,295
1	Farmers and their relatives	2.4	3.2	26.4	320	330	895
2	Gardeners and their labourers	5.9	8.3	23.3	787	856	790
3	Farm bailiffs and foremen	1.2	2.7	19.3	160	278	654
4	Woodmen and labourers in woods and forests	—	2.4	31.2	—	247	1,058
5	Agricultural labourers (including shepherds)	2.9	5.3	24.7	387	546	837
6	Coal mine—subordinate superintending staff	0.7	4.2	31.5	93	433	1,068
7	Coal mine—hewers and getters	4.7	3.6	34.9	627	371	1,183
8	Coal mine—persons conveying material to the shaft	6.7	4.0	29.3	893	412	993
9	Coal mine—persons making and repairing roads	7.4	4.3	42.4	987	443	1,437
10	Coal mine—other workers below ground	6.7	4.4	44.1	893	454	1,495
11	Coal mine—workers above ground, not superintending staff	5.9	2.1	31.8	787	216	1,078
12	Iron ore mine—underground workers, not superintending staff	3.9	3.8	29.9	520	392	1,014
13	Tin and copper miners—not superintending staff	—	—	29.9	—	—	1,014
13A	Tin and copper mine—underground workers, not superintending staff	—	—	47.2	—	—	1,600
14	Stone miners and quarriers	8.7	1.6	24.9	1,160	165	844
15	Slate miners and quarriers	—	—	41.4	—	—	1,403
16	Cement workers, lime burners, etc.	5.9	5.4	26.4	787	557	895
17	Brick and plain tile makers, etc.; furnace, etc., pot makers	11.6	5.2	33.9	1,547	536	1,149
18	Potters' mill workers; slip makers; potters	9.3	11.1	14.0	1,240	1,144	475
19	Pottery dippers, glazers, painters, decorators	13.7	13.7	45.2	1,827	1,412	1,532
20	Earthenware, china, etc., kiln and oven men	21.5	21.5	34.7	2,867	2,216	1,176
21	Brick, tile, etc., kiln and oven men	6.8	15.7	14.7	907	1,619	498
22	Other persons engaged in the manufacture of bricks, tiles and pottery	14.6	7.3	42.3	1,947	753	1,434
23	Skilled glasshouse workers	8.5	8.5	24.2	1,133	876	820
23A	Glass blowers and finishers, not machine hands	16.2	16.2	14.7	2,160	1,670	498
24	Other skilled glass workers	5.2	18.6	40.5	693	1,918	1,373
25	Chemical workers	7.9	13.2	31.9	1,053	1,361	1,081
26	Makers of paint, oil, soap, grease, etc.	7.3	18.2	31.3	973	1,876	1,061
27	Persons engaged in the smelting, rolling and converting of iron and steel	14.6	17.5	30.8	1,947	1,804	1,044
27A	Puddlers	25.1	30.4	30.4	3,347	3,134	1,031
28	Metal moulders	10.6	11.6	31.6	1,413	1,196	1,071
29	Iron foundry furnacemen and labourers	11.9	6.0	31.2	1,587	619	1,058
30	Brass foundry furnacemen and labourers	—	9.3	18.5	—	959	627
31	Smiths and skilled forge workers	8.8	12.7	33.5	1,173	1,309	1,136
32	Machine tool workers and metal spinners	9.0	6.1	31.5	1,200	629	1,068
33	Fitters, tool setters, millwrights, and similar occupations	5.4	9.6	25.3	720	990	858
34	Boiler makers and platers, and their labourers	11.3	14.0	25.3	1,507	1,443	858
35	Brass finishers and turners	4.0	11.7	54.0	533	1,206	1,831
36	Coppersmiths	—	22.5	11.2	—	2,320	380
37	Cutlers	8.6	28.9	18.2	1,147	2,979	617
38	File cutters	—	19.1	—	—	1,969	—
39	Gas fitters and pipe fitters	5.8	17.4	36.7	773	1,794	1,244
40	Metal grinders	21.8	19.5	44.8	2,907	2,010	1,519
40A	Grinders in the cutlery trade	34.8	—	48.1	4,640	—	1,664
41	Metal glazers, polishers, buffers and moppers	7.7	15.4	57.9	1,027	1,588	1,963
42	Plumbers	10.8	10.6	15.4	1,440	1,093	522
43	Riveters and their labourers	4.5	12.9	29.1	600	1,330	986
44	Tinsmiths and sheet metal workers	4.6	10.2	31.8	613	1,052	1,078
45	Gold, silver, and white metal smiths	9.3	16.9	29.9	1,240	1,742	1,014
46	Electrical engineers, fitters and wiremen	5.5	21.9	25.3	733	2,258	858
47	Makers of watches, clocks, scientific and electrical instruments	5.9	14.1	24.7	787	1,454	837
48	Skilled lime and tanyard workers, curriers and leather dressers	11.6	16.1	34.5	1,547	1,660	1,169
49	Skilled leather goods makers	3.3	17.0	18.5	440	1,753	627
50	Wool sorters	—	19.3	16.3	—	1,990	553
51	Cotton blow room operatives—skilled	12.1	—	50.5	1,613	—	1,712
52	Rag grinders; wool willowers, etc.	6.8	—	68.1	907	—	2,308
53	Cotton card and frame (not spinning frame) tenters	—	9.4	19.0	—	969	644
54	Wool, worsted card, comb, or frame (not spinning frame) tenters	3.6	20.3	30.6	480	2,093	1,037
55	Cotton strippers and grinders and card-room jobbers	—	19.1	6.8	—	1,969	231
56	Cotton spinners and piecers	5.4	9.4	47.3	720	969	1,603
57	Wool and worsted spinners and piecers	—	—	45.3	—	—	1,536
58	Cotton—doubblers, winders, warpers, beamers, etc.	3.5	10.9	40.2	467	1,124	1,363
59	Wool and worsted—doubblers, winders, warpers, beamers, etc.	—	—	7.8	—	—	264
60	Cotton weavers	6.3	7.2	35.6	840	742	1,207
61	Woolen and worsted weavers	3.0	3.0	30.2	400	309	1,024
62	Weavers of other textiles	—	—	28.5	—	—	966
63	Hosiery frame tenters and machine knitters	4.8	14.8	52.5	640	1,526	1,780
64	Dye mixers and dyers	5.6	5.6	36.1	747	577	1,224
65	Scourers (woollen, worsted and hosiery); calenderers and finishers	11.2	7.5	43.6	1,493	773	1,478
66	Cutters of textile goods and clothing (not machine cutters)	—	18.2	9.1	—	1,876	308

Group No.	Occupation.	C.M.F.			Ratio.		
		Tongue.	Oesophagus.	Stomach.	Tongue.	Oesophagus.	Stomach.
67	Tailors; tailors' pressers and machinists	3.1	8.5	24.0	413	876	814
68	Hat formers, plunkers, stiffeners	6.8	14.1	48.8	907	1,454	1,654
69	Boot and shoe makers and repairers (not factory hands)	7.1	9.2	25.9	947	948	878
70	Boot and shoe clickers and cutters	3.5	3.5	32.1	467	361	1,088
71	Skilled boot and shoe operatives—not clickers or cutters	3.8	6.1	34.5	507	629	1,169
72	Grain millers	3.5	3.5	22.6	467	361	766
73	Bakers and pastrycooks	7.4	12.7	28.8	987	1,309	976
74	Brewers of ale, stout, and porter	24.7	37.9	—	3,293	3,907	—
75	Cellarmen	6.1	44.4	26.1	813	4,577	885
76	Tobacco factory operatives	—	8.6	35.0	—	887	1,186
77	Foremen and overlookers (wood working)	3.0	3.1	52.9	400	320	1,793
78	Cabinet makers	8.4	15.0	39.6	1,120	1,546	1,342
79	Carpenters, coachbuilders, pattern makers and similar occupations	7.4	11.6	27.5	987	1,196	932
80	French polishers	11.6	30.7	36.5	1,547	3,165	1,237
81	Sawyers, wood turners and machinists	5.6	5.4	36.6	747	557	1,241
82	Upholsterers, coach trimmers, and bedding makers	5.3	23.3	30.9	707	2,402	1,047
83	Paper mill workers	6.8	7.1	30.9	907	732	1,047
84	Hand compositors	5.1	11.4	19.2	680	1,175	651
85	Machine compositors	—	11.9	—	—	1,227	—
86	Photographers	—	10.9	20.0	—	1,124	678
87	Printing machine minders and assistants; machine rulers	8.9	7.7	28.0	1,187	794	949
88	Bookbinders and pattern card makers	—	35.5	40.7	—	3,660	1,380
89	Employers and managers in the building, contracting and decorating trades; clerks of works	5.0	8.0	30.6	667	825	1,037
90	Foremen and gangers (building and contracting)	1.2	3.5	26.7	160	361	905
91	Bricklayers	10.2	12.9	27.4	1,360	1,330	929
92	Plasterers	13.7	10.7	54.2	1,827	1,103	1,837
93	Slaters and tilers	17.9	12.4	23.5	2,387	1,278	797
94	Masons; stone cutters and dressers	7.6	8.4	44.0	1,013	866	1,492
95	Slate masons and slate workers	—	16.2	42.1	—	1,670	1,427
96	Platelayers	5.8	1.5	28.4	773	155	963
97	Contractors' labourers; navvies	6.9	9.5	29.7	920	979	1,007
98	Painters and decorators	9.0	13.7	29.2	1,200	1,412	990
99	Building trade labourers	10.6	11.2	36.7	1,413	1,155	1,244
100	Rubber workers	25.4	25.0	36.7	3,387	2,577	1,244
101	Drafters and brush makers	10.1	15.5	35.7	1,347	1,598	1,210
102	Shipwrights	6.2	5.7	38.5	827	588	1,305
103	Shipyards labourers, etc.	13.3	8.4	53.3	1,773	866	1,807
104	Gas stokers	6.8	4.5	29.6	907	464	1,003
105	Railway officials, station masters, etc.	7.0	6.0	17.6	933	619	597
106	Locomotive engine drivers, firemen, cleaners	7.4	6.0	24.6	987	619	834
107	Railway guards	5.3	6.6	20.0	707	680	678
108	Railway signalmen	3.5	3.5	23.2	467	361	786
109	Shunters, pointmen and level-crossing men	7.3	7.7	33.7	973	794	1,142
110	Railway porters and lampmen	10.0	13.6	37.5	1,333	1,402	1,271
111	Livery stable and motor-garage proprietors and managers; haulage contractors	3.8	8.5	15.9	507	876	539
112	Drivers of horse-drawn vehicles	15.7	19.6	42.0	2,093	2,021	1,424
113	Drivers of motor vehicles and steam wagons	6.9	12.8	28.0	920	1,320	949
114	Tram drivers	5.1	5.1	16.2	680	526	549
115	Omnibus and tram conductors	28.3	7.3	33.0	3,773	753	1,119
116	Grooms and horse keepers	12.0	14.2	26.7	1,600	1,464	905
117	Bargemen and boatmen	6.0	11.8	40.6	800	1,216	1,376
118	Stevedores	22.4	28.6	33.3	2,987	2,948	1,129
119	Coal-boat loaders and dischargers	24.2	19.5	12.8	3,227	2,010	434
120	Other dock labourers	20.3	12.2	46.1	2,707	1,258	1,563
121	Messengers, hall porters, lift attendants, etc.	4.4	20.4	28.0	587	2,103	949
122	Porters	19.6	22.7	42.6	2,613	2,340	1,444
123	Proprietors and managers of wholesale or retail dealing businesses	5.5	7.9	25.6	733	814	868
123A	Proprietors and managers of businesses for the sale of fish, meat, greengrocery and milk	7.8	12.7	29.9	1,040	1,309	1,014
123B	Proprietors and managers of businesses for the sale of grocery and provisions	4.3	7.8	25.0	573	804	847
123C	Proprietors and managers of businesses for the sale of textiles and clothing	4.2	5.7	22.1	560	588	749
124	Salesmen and shop assistants	6.3	12.2	26.7	840	1,258	905
124A	Salesmen and shop assistants in businesses for the sale of fish, meat, greengrocery and milk	9.3	13.9	39.2	1,240	1,433	1,329
124B	Salesmen and shop assistants in businesses for the sale of grocery and provisions	5.4	15.9	22.9	720	1,633	776
124C	Salesmen and shop assistants in businesses for the sale of textiles and clothing	15.1	6.6	34.0	2,013	680	1,153
125	Commercial travellers	7.6	20.3	24.7	1,013	2,093	837
126	Canvassers, roundsmen and van salesmen	1.9	18.4	26.0	253	1,897	881
127	Costermongers, hawkers and street sellers	14.4	10.4	38.8	1,920	1,072	1,315
128	Bank officials	—	4.4	11.3	—	454	383
129	Insurance officials	1.4	—	28.4	187	—	963
130	Insurance agents and canvassers	4.2	7.0	29.9	560	722	1,014
131	Auctioneers, appraisers, valuers	7.2	10.7	19.2	960	1,103	651
132	Civil service officials and clerks	4.8	8.1	17.1	640	835	580
133	Local authority officials and clerks	6.7	5.2	18.8	893	536	637
134	Clergymen (Anglican Church)	1.4	1.7	17.4	187	175	590
135	Roman Catholic priests; monks	—	11.1	9.3	—	1,144	315
136	Ministers of other religious bodies	—	2.3	13.8	—	237	468
137	Barristers	6.2	—	—	827	—	—
138	Solicitors	1.9	13.4	15.6	253	1,381	529
139	Registered medical practitioners	5.3	10.6	12.1	707	1,093	410
140	Dentists	5.6	4.5	19.0	747	464	644
141	Teachers (not music teachers)	4.0	4.7	18.1	533	485	614
142	Music teachers	—	20.4	4.7	—	2,103	159
143	Civil engineers and surveyors	—	7.5	10.7	—	773	363
144	Architects	11.3	10.1	14.1	1,507	1,041	478
145	Authors, editors, journalists	8.8	14.4	14.9	1,173	1,485	505

Group No.	Occupation.	C.M.F.			Ratio.		
		Tongue.	Oesophagus.	Stomach.	Tongue.	Oesophagus.	Stomach.
146	Artists	3.3	13.3	28.8	440	1,371	976
147	Proprietors and managers of theatres, entertainments, sports	3.1	—	33.7	413	—	1,142
148	Actors	5.2	16.7	38.3	693	1,722	1,293
149	Musicians	20.9	16.3	35.6	2,787	1,680	1,207
150	Domestic servants (indoor)	7.6	16.7	19.8	1,013	1,722	671
151	Gamekeepers	6.0	12.6	23.5	800	1,299	797
152	Inn, hotel—keepers, publicans	12.4	17.8	29.0	1,653	1,835	933
153	Barmen	41.2	41.6	55.5	5,493	4,289	1,881
154	Waiters	12.7	39.6	55.2	1,693	4,082	1,871
155	Laundry workers	—	16.2	20.3	—	1,670	638
156	Hairdressers, etc.	9.1	13.0	26.3	1,213	1,340	892
157	Chimney sweeps	5.4	4.4	40.7	720	454	1,380
158	Clerks (not civil service or local authority); typists	6.5	13.1	20.6	867	1,351	698
158A	Bank and insurance clerks	11.4	12.3	20.7	1,520	1,268	702
158B	Railway clerks	4.0	4.0	7.6	533	412	258
159	Draughtsmen	5.3	—	15.0	707	—	503
160	Warehousemen	9.5	12.4	28.1	1,267	1,278	953
160A	Warehousemen—textiles and clothing	3.5	26.9	44.0	467	2,773	1,492
160B	Warehousemen—cereals, provisions and dry goods	4.1	11.7	30.9	547	1,206	1,047
161	Storekeepers	6.0	15.3	33.0	800	1,577	1,119
162	Packers	8.4	10.4	31.1	1,120	1,072	1,054
163	Stationary engine and crane drivers	7.4	8.7	38.3	987	897	1,298
164	General and undefined labourers	14.3	14.5	43.2	1,907	1,495	1,464

